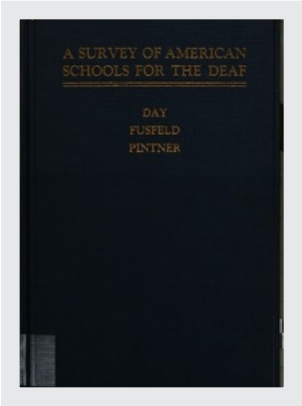

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AUTHORS

Day, Herbert Ernest; Fusfeld, Irving S.; Pintner, Rudolf; National Research Council

A SURVEY OF AMERICAN SCHOOLS FOR THE DEAF

1924--1925

CONDUCTED UNDER THE AUSPICES OF THE

NATIONAL RESEARCH COUNCIL

REPORT PREPARED BY

HERBERT E. DAY
Sometime Professor of English
Gallaudet College, Washington, D. C.

IRVING S. FUSFELD
Professor of English and History
Gallaudet College, Washington, D. C.

RUDOLF PINTNER
Professor of Education
Columbia University, New York City

ISSUED BY THE

NATIONAL RESEARCH COUNCIL
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FOREWORD

At its meeting at Jacksonville, Florida, in January, 1924, the Conference of Superintendents and Principals of American Schools for the Deaf endorsed a proposal which had been under consideration for several years for a survey of schools for the deaf in this country, and requested the National Research Council to take charge of such a survey. The purpose of the survey was to throw light on the general conditions of administration, material equipment, and the curricula of these schools. The National Research Council was especially interested in this study because of the possibility offered by it for defining important scientific problems of research relating to deafness which might become the objectives of later investigation.

The proposal for this survey was presented to the Laura Spelman Rockefeller Memorial, which appropriated a generous sum for its support. The survey was carried out during the following academic year, 1924-25, forty-two institutions being visited altogether, representing both residential and day-schools, and city and suburban schools in all sections of the United States.

The investigators who visited these schools, Professor Herbert E. Day and Professor Irving S. Fusfeld, of Gallaudet College, were most conscientious in their conduct of the survey. For the comprehensiveness of the material which has been collected, we are indebted to their faithful and effective efforts. We are under special obligation to Professor Day also for assisting in planning the report and for joining in the preparation of Chapters XII and XIII, and equally to Professor Fusfeld for having completed all other parts of the report except Chapter XIV and for bringing all the chapters together for publication as a whole. Professor Rudolf Pintner, of Teachers College, Columbia University, very kindly took over the analysis of the data of the intelligence and

educational tests given to pupils during the course of the survey, and prepared the results of his analysis of these data for publication as Chapter XIV. We are also grateful for the coöperation of the *American Annals of the Deaf* in the initial publication of the report serially.

On the completion of the report, by the publication of the final chapter of the series in the *American Annals of the Deaf* for May, 1928, the several parts were consolidated and are here printed in book form in order to make the results of the survey readily available as a whole.

The National Research Council hopes that these results will be of interest and use to the many devoted administrators and teachers engaged in the education of the deaf. The hope of the Council, that scientific problems in connection with deafness would be revealed or emphasized during the survey, has been realized and the Council has already taken steps to assure careful study of certain of these problems.

VERNON KELLOGG,
Permanent Secretary,
National Research Council.

June, 1928.

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CHAPTER I

PURPOSES AND SCOPE OF THE SURVEY

In agreement with the progressive trend in education, authorities of schools for the deaf have long felt the need of a thorough investigation for the purpose of suggesting standards for the general betterment of the institutions in their care.

This feeling has during recent years found definite expression in various attempts to study the problems incident to the education of deaf children. Among these efforts was the work of Pintner, Paterson and Reamer, who made separate scientific studies of the psychology of deaf children and its relation to their achievement in school. Another noteworthy effort was the work of a special committee of prominent educators of the deaf, whose researches were summed up in a report published by its chairman, R. O. Johnson, formerly superintendent of the Indiana School for the Deaf.[1] These studies, being limited in scope, did not completely cover the field, but they did serve to quicken the desire for a thorough, impartial survey of the efficiency of schools for the deaf carried out on a general scale by competent educators of the deaf.

A plan to bring this to fulfillment was submitted in the year 1923 to the National Research Council, which eventually endorsed the project as a worthwhile scientific undertaking and agreed to conduct such a study under its auspices and with the coöperation of the executive committee of the Conference of Superintendents and Principals of American Schools for the Deaf. With its endorsement the National Research Council enlisted the aid of the Laura Spelman Rockefeller Memorial which generously provided the funds for the contemplated investigation.

To direct the course of the survey, the National Research Council chose a committee of representative edu-

[1] "Standardization-Efficiency-Heredity; Schools for the Deaf," 1920; (Wm. B. Burford, Printer, Indianapolis.)

cators of the deaf as well as men prominent in various fields of science. This committee was composed as follows: Vernon Kellogg, chairman of the Division of Educational Relations, National Research Council, Washington, D. C., chairman; Ludvig Hektoen, chairman of the Division of Medical Sciences, National Research Council; Robert S. Woodworth, chairman of the Division of Anthropology and Psychology, National Research Council; Percival Hall, president of Gallaudet College, representing the Convention of American Instructors of the Deaf and the Conference of Superintendents and Principals of American Schools for the Deaf; Charles W. Richardson, representing the Permanent Committee of the Deaf Child, of the American Medical Association; A. L. E. Crouter, superintendent of the Pennsylvania Institution for the Deaf, representing the American Association to Promote the Teaching of Speech to the Deaf, and the executive committee of the Conference of Superintendents and Principals of American Schools for the Deaf; and Rudolf Pintner, professor of education, Teachers College, Columbia University, New York.[2]

Plans drawn up for the conduct of the survey were considered and approved by this committee, and two field agents engaged to visit a number of typical schools for the deaf in this country during the school year 1924-1925, for the purpose of gathering the data desired. The chief field agent was Professor Herbert E. Day, and the assistant investigator, Assistant Professor Irving S. Fusfeld, both of Gallaudet College, Washington, D. C. Professor Day visited all the schools taking part in the survey, and Professor Fusfeld assisted in those visited during the first part of the investigation, in the fall of 1924.

[2]When Dr. Hektoen and Dr. Woodworth retired from the work of the committee, their places were filled by the appointment of Dr. Victor C. Vaughan and Dr. George M. Stratton; and following the death of Dr. Crouter in June, 1925, Dr. Harris Taylor, superintendent of the Institution for the Improved Instruction of Deaf-Mutes, New York, joined the committee.

The information to be collected and the questions to be studied touched upon practically every phase of the education of deaf children. A questionnaire, which was forwarded in advance of the field agents to the different school authorities, sought details regarding type of school, general management, executive authority, administration, financial support, receipts and expenditures, legal status, qualifications, salaries and training of teachers, curriculum, methods of instruction, library, custodial care, extra schoolroom life, occupation of graduates, and general school policy.

To serve as a basis for a study of the pupilage in schools for the deaf, pupil cards were also sent to each school visited, on which certain facts were to be filled out, such as sex, race, age, birthplace, age when deafness occurred, cause of deafness, age when first admitted to school, schools attended, grade, subjects studied, methods of instruction, means of communication, number of years taught speech, language relied upon at home, length of kindergarten and preliminary manual training, trades learned in school, parentage, and physical condition.

The survey also attempted a scientific determination of the degree of residual hearing possessed by children in schools for the deaf, for which purpose use was made of the 3-A audiometer, a device standardized by the Western Electric Company. Opportunity was also afforded to make a study of the results of speech work in schools for the deaf, and to do this a series of tests for both speech-reading and the intelligibility of speech was prepared. An additional feature of the investigation was the application on a wide scale of standard mental and educational tests to discover the extent to which the education of deaf children is keeping pace with their native ability, and to establish norms in both of these fields.

The field agents, further, during the course of their visit to the various schools, made careful note of those prominent features or practices that it would be of benefit

to emphasize in a comparative study of the work of such schools.

At the outset of the investigation it was found advisable to limit the study of deaf pupils, especially for the mental and educational tests and the tests for hearing, to those who had reached their twelfth birthday, for, owing to their marked handicap in language understanding, deaf children below this age are quite uncertain in their responses.

As the National Research Council planned to complete the survey within the nine months of the school year beginning September, 1924, it was found necessary to limit the investigation to a number of schools which typified the different practices followed. It was on this principle that the following schools—43 in all, 29 residential and 14 day-schools—were invited to participate in the survey.[3] The month each school was visited and the enrollment as of October, 1924, are also given.

New Jersey School	September	248
Lexington Ave. School (N.Y.C.)	September	240
New York Institution	September	374
Hartford School	September	190
Horace Mann School (Boston)	October	150
Gallaudet College	October	122
Kendall School	October	50
P. S. 47 (N.Y.C.)	October	362
St. Joseph's Institute	October	374
Newark Day-School	October	83
Rochester School (N.Y.)	November	171
Rochester Day-School (N.Y.)	November	....
LeCouteulx St. Mary's Institution	November	182
Erie Day-School	November	27
Western Pennsylvania School	November	296
Cleveland Day-School	November	140
Ohio School	November	509
Pennsylvania Institution	December	543
North Carolina School	January	301

[3]A few schools of types that would have added to the value of the survey, although invited, did not, for various reasons, take part in the survey. A number of other important schools originally included in the list to be surveyed, which were quite eager to be visited, were finally necessarily omitted because of the limited time available and the fact that similar types had already been visited.

Virginia School	January	196
South Carolina School	January	206
Alabama School	January	212
Mississippi School	January	184
Arkansas School	February	301
Missouri School	February	307
Texas School	February	464
Texas School for Colored Deaf	February	111
Gallaudet Day-School (St. Louis)	March	....
Kentucky School	March	343
Parker Practice Day-School (Chicago)	March	125
A. G. Bell Day-School (Chicago)	March	84
Iowa School	March	293
Nebraska School	April	177
Colorado School	April	143
Utah School	April	118
California School	April	181
Gough School (San Francisco)	May	41
Oregon School	May	123
Washington School	May	119
Portland Day-School	May	30
Minneapolis Day-School	June	69
St. Paul Day-School	June	22
Beidler Day-School (Chicago)	June	110

Thus, more than 8,300 deaf children were included in the schools visited, this number, according to the statistics given in the *American Annals of the Deaf*, January, 1925, approximating 54 per cent of the total attendance of schools for the deaf in this country at the time of the survey.

Upon completion of the survey, the task of analyzing the data collected was taken up so that the results obtained could be published with reasonable dispatch. In this analysis, as given in subsequent chapters, the schools concerned are designated by either symbol or number, the key to which is in the possession of the National Research Council, Washington, D. C. A school desiring to determine its symbol or number should make inquiry of the Council, addressing Dr. A. L. Barrows, secretary of the Division of Educational Relations.

With one accord, the schools included within the survey entered into the study with the greatest enthusiasm

and interest, offering every facility at their command to make it both thorough and complete. The National Research Council, the committee directing the survey, and the field agents here make grateful acknowledgment, realizing that such success as pertains to the undertaking is in large measure due to this spirit of coöperation.

CHAPTER II

MANAGEMENT OF PUBLIC RESIDENTIAL SCHOOLS FOR THE DEAF

A determination of the status of schools for the deaf as great working institutions is made possible by a study of the data collected during the survey. Information concerning practically every phase of the conduct of such schools was obtained by means of a more or less elaborate questionnaire, and in the pages that follow an attempt is made to analyze and present this information so that conclusions will be self-evident. In the first part of this report, the 29 residential schools visited by the agents of the National Research Council are considered.

TYPE

A consideration of the answers discloses that as concerns type there is striking similarity in some respects. Thus, all the 29 residential, or boarding, schools examined receive state support either wholly or in large measure. The 10 schools included in the latter case are semi-public, that is, the grounds and buildings are owned by private corporations and pupils are accepted at public expense.[1] The public nature of the schools is further reflected in the fact that in no case are the respective schools legally denominational.

GENERAL MANAGEMENT

The residential schools show great diversity in their form of general management. Of the 29 schools studied,

[1]It may be worth noting at this point that the dates of establishment of these 10 semi-public institutions range from 1817 to 1876. Of the other 19 residential schools visited that are entirely state institutions, only 5 were founded later than this period, the last in 1894. This comparison indicates that private enterprise, in addition to taking the initial steps in the work, continued to display a public-spirited interest in the education of the deaf long after efforts had begun on a wide scale on the part of state authorities to carry on the same work.

10—all purely state institutions—are governed by a special board chosen by public authority. According to the report from these schools such a system of control is an advantage in that the members of the board, usually influential men and women, show a special interest in the welfare of the school since they are not concerned with other state institutions. In one case, however, this advantage is somewhat nullified because the terms of the members of the board all expire at the same time so that when a new governor is elected the outgoing board takes with it the experience and interest it has developed during its term. Another difficulty is that the members of such a board sometimes live in widely separated parts of the state, so that it becomes difficult for them all to attend meetings. One other objection is the possibility of the governor's carrying out personal purposes in the appointment of members.

Five of the 10 schools managed by such a special board chosen by public authority are content with that arrangement. In one of the others it is felt that the ideal type of management is either such a board or else the state board of education. One superintendent would prefer a self-perpetuating board; the other 3 suggest that the terms of members should overlap and that the board be non-partisan in character.

Five other state schools are under the management of a state board of control. Here the advantages are economy in purchases, especially where the same board looks after the supplies of other state institutions, and a free hand for the head of the school in dealing with actual school problems. Under such a system, however, the school for the deaf may be classified with penal, reformatory and custodial institutions and the board members think and plan in terms of business and its problems rather than of education and its problems. Another shortcoming is that in some instances the board changes with each administration.

The opinion of school heads serving under a state board of control as to the ideal type of general management varies. Two cases were found in which the system would be satisfactory if the board were of a more permanent character, and if the possibility of its reflecting personal and political whims could be eliminated. One superintendent suggests that the school could be managed efficiently by an honorary board appointed by the present state board of control which consists of the governor, the secretary of state and the state treasurer, and which as it stands can not be familiar enough with the needs of the school. In one other case, the head of the school would exchange the state board of control for the state board of education.

Three of the state schools visited are placed under the state board of education. Here the feeling is that they are thereby recognized as part of the general school system, and that so far this plan has not shown any weaknesses. However, one of the heads concerned cautions that complications may occur if an "opinionated arbitrary man" should become superintendent of public instruction. This same educator of the deaf prefers a board of five directors appointed by the governor as more satisfactory.

In one state the institution comes under the management of a welfare director who exercises the same authority over all other state institutions which are thus, so the superintendent of the school for the deaf says, entirely removed from politics. The handicap here is that the school has no direct appeal to the legislature; under the department of education the school would retain its identity and obtain and use its own funds.

Among the semi-public institutions reached in the course of the survey, 8 are managed by a self-perpetuating board, and 2 by a combination of self-perpetuating board and special board chosen partly by public authority. In these cases the marked benefits accruing from this type

of management seem to be independence of action and complete freedom from the effects of political influences. In addition, the permanence of the board and its attachment to the institution result in a personal touch that works materially to the advantage of the school. The only disadvantage, in one case, is the burden entailed in the demands of enormous detail, voluminous reports, and frequent delay to consult with trustees and committees. The superintendent of the same school, in answer to the question as to what would constitute an ideal board in his case, replied frankly, "I do not know." In another instance, because the school is not directly a state institution, the difficulty of obtaining needed new buildings is a handicap, although this may in part be offset by special gifts. Otherwise there seems to be a general satisfaction among these school heads with this type of management, although one would like to see greater activity on the part of his board. The ideal board, another suggests, is one that is between 7 and 15 in number, non-political in composition, with its members appointed for long terms.

A majority of the 29 residential schools studied—18 in number—report that their respective boards of management concentrate all their efforts on these schools. In the remaining 11, a wide variety of control prevails. In 4 cases the school for the deaf is part of the general state system of education and along with other educational institutions is managed by a central board, or department, of education. One school is managed by a board of control that in addition looks after the state school for the blind. In all the other instances, the central control extends over a miscellany of state institutions that includes state hospitals for the insane, institutions of correction, soldiers' and sailors' homes, and sanatoriums.

Twelve schools, according to the information obtained from the survey, are entirely independent of political

factors in their management.[2] In 16 schools the general board of control is appointive with the governor, requiring legislative ratification in some cases. However, in most of these cases the non-partisan character of the board is maintained by so far as possible an equal division of appointees among the dominant parties. For one school the management is in the hands of a committee composed of the governor, the secretary of state and the state treasurer, and in another school the general oversight lies with a director of the welfare department, both of these schools having already been referred to in this respect.

MANAGING OFFICER

There is general agreement among the schools visited on the title of the executive officer in the residential schools. In 19 schools he is called the superintendent, and in 4 others he is officially both superintendent and principal. In 5 schools the executive officer bears the title of principal, and in one other he is the president.

In 23 of these schools the presiding officer is appointed by, and is responsible to, the managing board. In 3 cases he is appointed by, and is responsible to, the director of the managing board or department of state controlling the school. The head of one school is appointed by the board of directors, but he owes responsibility to the president of that body. One superintendent is chosen by the governor and is responsible to that official and the board of trustees.

The length of term of appointment of the executive officer is in a majority of schools—16 out of the 29—for an indefinite period, dependent upon the pleasure of the

[2] It may not be necessary to refer here to all the baneful influences that in days gone by accompanied political interference in the affairs of schools for the deaf. It is enough to state that such practices as summary dismissal for lack of allegiance to one political faction or another, and "inviting" teachers and officers to contribute financial aid in behalf of a high state official who may have run afoul of the law will not be countenanced by present-day public opinion.

managing board. In the remaining schools the term of appointment is fixed between 1 and 4 years, in most cases a nominal procedure. In 6 of these schools it is for a one-year period, in 5 for a two-year term, and in 2 other schools it is for three and four years respectively.

The extent of control maintained by the managing officer over the general affairs of his institution is indicated by the following summary:

	Yes	No	In Part	With Approval by Board
Controls disbursement of funds*	12	4	3	8
Appoints teachers	11			18
Appoints other employees	18	1	3	7
Supervises school work	23	4	2	
Has assistance for supervising school work	25	4		
Has responsible business assistant	22	7		

*In one instance the head of the school and the chairman of the executive committee of the board together control expenditures, and in another school the superintendent does so only by requisitions.

The trend of opinion as to the ideal way of appointing the managing officer is largely in favor of choice by the board governing the school, with the safeguard that the latter body be non-partisan, 23 of the 26 school heads who offered suggestions replying practically to that effect. One superintendent prefers recommendation of appointment by the commissioner of education to the state board of education which governs his school. One other executive is content with the existing practice in his state, appointment by the director of welfare; another requires only that the selection be of the most competent person available.

Fifteen of these cases suggest that the length of the term of appointment of the presiding officer of the school be for an indefinite period or during efficiency. One would impose, in addition, an age limit of about 65. Six would have the term last at least 4 years, and one each would limit it to 1, 2, 2 to 4, and 6 years, respectively.

Almost all the answers voice the same sentiment over what the managing officer's responsibilities should be. Twenty-three reply that he should assume complete responsibility for the conduct and welfare of the school in all its departments, answerable to his managing board. In the 3 other schools making reply, one superintendent would wish to have the more important financial matters removed from his responsibilities, another feels that he should be given the appointive power over all who work under him, and for the third, the feeling is that he should recommend all teachers for appointment and be empowered to manage all the business of the school.

BUSINESS MANAGEMENT

There is also great difference of practice in the administration of business affairs (purchasing of supplies, etc.). All such matters in 11 schools are conducted directly through the executive office; in 5 schools they are in the hands of a clerk or business manager responsible to the head of the school, and in 9 schools both the superintendent and clerk or business officer together take care of business affairs. Two schools have this done by a disbursing officer independent of the principal or superintendent, and one other school has its business affairs administered by the superintendent, by an officer responsible to the latter and by a state director of finance and purchase through whom large purchases are made.

The details of business management in the different schools are characterized by so varied a degree of minuteness as to make classification difficult. The information on this matter obtained by the survey should, however, be instructive in that it reveals the extent to which formal business routine may become so entangling that for the school head in some instances it detracts—not to say distracts—attention from what should be the main function of the school.

The individual systems that are in force in the schools surveyed may be described as follows:

R-1.—The board of trustees makes requisition on the state treasurer quarterly for the required amount of funds. The board then advances funds to the head of the school, who in turn accounts quarterly, submitting vouchers for all expenditures.

R-2—A semi-public school. All checks are signed by the head of the school and by the chairman of the executive committee of the governing board. A special system of accounting devised by a financial expert prevails.

R-3.—The disbursing officer draws vouchers on two funds appropriated for the use of the school—for salaries and for maintenance. There are also a continuous inventory and an itemized commissary report, together with a monthly detailed classification of expenditures.

R-4.—In this case the appropriations are made in lump sums for the "Schools for the Deaf and the Blind," and although this plan has worked smoothly so far, the head of the school feels it is not an ideal arrangement.

R-5.—The method and forms prescribed by the state board of examiners are employed for the business transactions of this school.

R-6.—As regards pupils there is a daily accounting. Otherwise, a monthly accounting is made to the board of directors and a quarterly reckoning to the state.

R-7.—The appropriations are made in a lump sum and are expended under the supervision of the board of directors. Expenditures, however, must be made in accordance with the regulations of the general accounting office of the government. Supplies must be bought through the general supply committee of the government, and all purchases of over $100 in amount must be submitted for public bids.

Quarterly allotments of government funds must be made at the beginning of the fiscal year and a separate reserve set aside as well. Expenses must be accounted

for on voucher forms approved by the government and submitted for examination and approval at the end of each quarter.

Income and expenditures from all other sources are accounted for in practically the same way except that the examination of the private auditor of the institution and the board is the final action.

R-8.—Purchases are made by the steward on order from the superintendent and other officers. Bills are approved by the superintendent and also by the finance committee of the managing board. Payments are made monthly by check.

R-9.—Separate appropriation is made in one of the government bills to pay for pupils within its jurisdiction. These pupils are received under a contract made between the board of directors of the institution and the commissioners of this jurisdiction. Such government funds and all tuition fees and other income from private sources are expended and accounted for as in R-7. All the business of the institution is handled by the corporation controlling R-7.

R-10.—The state has a uniform system of bookkeeping which, according to the head of this school, is not at all satisfactory. The school sends a copy of each bill for a purchase made to the state auditor on the first day of every month. The latter official then sends funds to the school treasurer, and the superintendent draws against these funds to pay the bills.

R-11.—The books are audited quarterly by a public accountant and examined by the representatives of the state board of charities and of the city department of public welfare.

R-12.—A uniform system of accounting is in effect for all the state institutions established by the state auditor's accounting department.

R-13.—All purchases are made by the steward on requisitions from the different departments of the school

and all supplies are given out by the steward on requisition. All invoices are checked against the steward's requisition for daily purchases. Pupils' clothing accounts are kept by matrons and supervisors and checked monthly in the main office.

R-14.—The board of directors, meeting monthly, authorizes all expenditures for each succeeding month and authorizes the payment of all bills that have been vouched for. The steward keeps the accounts and is held responsible for all authorized expenditures. All salaries and all bills are paid monthly.

R-15.—All bills for supplies or labor are made in the form of vouchers sworn to by the firm or person vouchering. These go to the board of control to be allowed, then to the state treasurer for payment by warrant.

R-16.—This school operates under a state purchase system. Application, by requisition, is made for what is needed under the various departments. The requisitions are forwarded to the state purchasing agent who buys the needed supplies.

R-17.—The state auditor has all accounts of the school audited once a year. The steward is a bonded officer who is a bookkeeper and the accounting agent.

R-18.—Vouchers in quadruplicate are certified by the superintendent, approved by the voucher clerk in the state department of welfare, approved by the department of finance, and sent to the office of the auditor of the state where a warrant is drawn on the state treasury. All accounts are checked against requisition and purchase order number.

R-19.—No information obtained.

R-20.—All bills are paid monthly by check, and items are entered in a double-entry cash journal and classified. Monthly postings are made in a general ledger. Bills for maintenance of pupils are rendered quarterly to the state, and quarterly or annually to the counties. Bills for items chargeable to pupils are sent once a year to parents.

R-21.—All invoices are paid monthly by the superintendent from a revolving fund which is replenished at the end of the month.

R-22.—The method of accounting followed is that required by the comptroller of the city in which the school is located.

R-23.—The accounting system employed here includes a cash journal, a quarterly financial statement, and a yearly financial statement.

R-24.—A stock-book is kept showing a daily record of receipts and disbursements for groceries, dry goods, and hardware. Quantities of such stock are drawn from the store room by signed requisitions presented to the accountant by various employees. The value of goods on each requisition is figured and this amount is credited to a stock cash book and each invoice for goods received is debited to this same cash book.

Besides the grocery, dry goods and hardware accounts there are 8 other accounts kept of invoices for purchased goods, and each invoice when audited by the accountant prior to its being sent to the state board of control is stamped accordingly. The accounting department of the board of control handles these invoices in a similar way, and at the close of the fiscal year the accounts of the school are checked with those kept by the board.

R-25.—The busines management of this school includes these separate steps: purchases on requisition and purchase order; voucher system in itemized form; regular checks in payment of all vouchers; accounts to balance with the state auditor.

R-26.—All accounts are paid by check, covered by vouchered receipts. A monthly audit is carried out by the executive committee of the board of directors. A detailed, itemized monthly report is rendered the state auditor, the state budget bureau and the governor. Periodic examination of all books is made by the state accountant.

R-27.—The accounting system followed by this school is the one installed by the state department of efficiency.

R-28.—The accounts of this school are subject to the following scrutiny: audited by the superintendent monthly; by the executive committee of the board of trustees monthly; by a representative of the auditor general's department quarterly; by a committee appointed by the board of trustees at the end of each fiscal year.

CHAPTER III

FINANCIAL SUPPORT OF PUBLIC RESIDENTIAL SCHOOLS FOR THE DEAF

Of the 19 schools in the survey that are supported by public funds only, the appropriations for 16 are voted in sum for a biennial period; in the rest it is for an annual period.

The following summary gives the proportions of support derived from public and private sources by 9 of the semi-public institutions:

School	Percentage of Support Derived from Sources	
	Public	Private
A	97	3
B	95	5
C	94	6
D	90	10
E	85	15
F	85	15
G	82	18
H	70–75	25–30
I	72	28

Only one of the residential schools included in the survey derives its financial support from a fixed percentage of public tax.

Eleven of the schools studied benefit from endowment or trust funds, summarized as follows:

School A. When the state in which this school is located assumed statehood, the federal government granted to the school for the deaf and the school for the blind each 100,000 acres of land. The money received from the sale of these lands constitutes a perpetual fund invested by the state land board, the two schools obtaining the interest, and also the rentals from leased lands. For each school this amounts to from $14,000 to $20,000 annually and is used for salaries and maintenance.

School B. A fund of approximately $350,000 was obtained from Congress many years ago, the income from which is used in general maintenance.

School C. A sum of approximately $86,500 has been acquired from bequests and is used for the benefit of the school.

School D. Legacies, bequests, and the transfer of real estate have been the means of building up a fund of approximately a million dollars, which is largely employed at the discretion of the board of directors.

School E. Gifts to the institution in the amount of $136,600 provide a fund that helps in the partial support of the school.

School F. By bequests a building fund of a little over $10,300, and a like sum as a college scholarship fund, have been placed at the disposal of the school.

The 5 remaining schools in this group have at their command sums varying between $1,800 and $12,000, obtained by gift, legacy, or land grant, and used as funds for such special purposes as the purchase of library books, the pleasure of the pupils, "needed improvements," manual training, and general expenses.

For 12 schools, the public appropriation for support is made in a lump sum. Five other schools obtain their funds as a per capita allowance. Nine institutions receive their appropriations assigned either on a budget basis or else divided among the different departments of the school. The funds for the support of one other school are made available in quarterly periods.

A budget system is employed in 16 schools as against 8 where such a system is not followed. In 4 schools the budget system is carried on in a general way.

For their own state pupils, 15 schools are not permitted to charge tuition fees even though there is ability to pay. Such a charge may be made in 13 of the residential schools. In this latter group of schools the percentage of pay pupils enrolled varies from less than one per cent to as high as 16 2/3 per cent, and one of these schools states that "all pay some."

Only 7 of the 29 residential schools deny admission to

residents of other states. In the remainder, pupils outside the state may enter and pay tuition although as a rule prior consideration must be given applicants from the home state.

The yearly tuition rates for those schools making a statement are indicated in the following tabular summary:

Rate	Number of schools
No set rate	4
No charge	2
$150	1
315	2
320	1
400	1
450	1
480	1
500	6
550	3
600	2
No answer	5

Average for those making reply	$460
Median for those making reply	$500

Of the 29 schools studied, only 9 indicate a fixed per capita allowance per pupil per year, as follows:

Number of schools	Allowance
1	$320
1	339
1	373
1	500
5	550

Fifteen school heads express themselves in favor of state appropriations as the best basis of support for public schools for the deaf, and 6 approve of a fixed percentage of public tax. One other managing officer commends either of these above methods. Two endorse a per capita cost basis, while one suggests public-school funds as the means of support.

FINANCES

The problem of the cost of educating deaf children has become for those in charge of schools for the deaf a most exacting responsibility. As an outcome of the stress of

war and post-war conditions, the financial aspects of the conduct of such schools in our country have of necessity undergone great change. To determine the extent of these fluctuations is one of the purposes of this study.

The disturbances to the economic current of the decade preceding the survey have resulted chiefly in a greatly increased cost of living, meaning for residential schools a greatly increased cost of food, and upkeep, and of necessity greatly increased salaries. The degree of success with which these problems have been met is evidenced by the facts from the data collected during the survey and herewith set forth in summary.

The most reliable index of the operating basis of schools is the statement of per capita cost. For this reason the following tabular arrangement of per capita cost figures for the 10-year period preceding the survey affords a significant view of the financial problem confronting those in whose hands lies the management of schools for the deaf. The 27 residential schools for which figures are available are ranked in the order of percentage of increase for the decade under consideration, each school being designated by number.

TABLE I

Per Capita Cost

School	1914-1915	1918-1919	1923-1924	Percentage of Increase 1914-1924
R-8	$258	$461	$613	138
R-26	217	245	407	88
R-16		470	862	83**
R-21	146	180	255	75
R-24	224	309	387	73
R-15	286	416	482	69
R-28	288	327	480	67
R-17	258	352	431	67
R-5	435	639	722	66
R-6	449	567	720	60
R-14	335	435	534	59
R-25	354	500	548	55
R-18	216	326		51*
R-22	414	462	605	46
R-2	366	502	530	45
R-13	326	502	470	44
R-20	356	361	510	43
R-23	373	402	520	39
R-1	256	285	353	38
R-10	239	277	327	37
R-7	642	827	866	35
R-19	211	256	280	33
R-4	505	689	668	32
R-12	273	294	354	29
R-9	544	540	643	18
R-11		542	610	12**
R-3			265	

Average of the percentages of increase in per capita cost, 1914 to 1924..... 54

*For the period 1914 to 1919.
**For the period 1918 to 1924.

Another aspect of the problem is presented in the following form, showing the increase in total expenditures over the period from 1914 to 1924. Here also the schools are listed in the order of percentage of increase, the same symbols being used as in the previous table.

TABLE II

Total Expenditures

School	1914-1915	1918-1919	1923-1924	Percentage of Increase 1914-1924
R-8	$59,896	$83,348	$243,199	306
R-5	85,110	143,116	214,453	152
R-17	68,963	102,124	169,218	145
R-16		94,024	215,727	129**
R-1	39,912	50,097	78,028	95
R-26	59,603	62,460	110,019	84
R-11	85,649	127,515	150,331	75
R-28	75,714	90,102	132,261	74
R-15	49,492	70,835	84,849	71
R-20	58,361	63,861	92,981	59
R-18	95,942	150,840		57*
R-14	181,210	219,692	274,025	51
R-25	58,000	73,000	85,000	46
R-12	43,631	44,051	63,647	45
R-7 and 9	94,986	112,555	135,958	43
R-6	197,570	232,909	280,985	42
R-4	136,213	160,394	189,571	40
R-2	73,613	97,830	101,633	38
R-24	127,100	175,867		38*
R-10	85,871	92,564	118,464	37
R-23	70,967	70,027	95,778	35
R-21	70,046	79,600	88,050	25
R-13	147,483	166,518	171,727	16
R-22	214,262	205,713	228,831	6
R-3			100,000	

Average of the percentages of increase in total expenditures, 1914-1924 71

*For the period 1914-1919.
**For the period 1918-1924.

Scrutiny of still another table, that giving the expenditures for salaries during the same period, shows the attention given to that question, as follows:

TABLE III

Expenditures for Salaries

School	1914-1915	1918-1919	1923-1924	Percentage of Increase 1914-1924
R-8	$ 27,176	$ 31,659	$ 83,327	206
R-16		42,326	121,065	186*
R-21	12,135	13,866	31,677	161
R-1	14,360	17,446	31,669	120
R-23	27,634	35,133	57,187	106
R-28	43,747	48,113	90,032	105
R-5	50,646	59,183	102,201	101
R-4	58,778	95,168	117,787	100
R-24	50,590	73,573	100,938	99
R-20	30,775	32,570	56,643	84
R-26	31,399	35,186	56,480	79
R-12	17,871	18,584	31,109	74
R-11	49,116	59,149	85,127	73
R-13	58,965	70,134	99,227	68
R-18	53,824	83,719	89,032	65
R-14	103,919	116,253	166,458	60
R-15	26,470	30,263	42,228	59
R-17	36,769	43,229	57,167	55
R-10	42,621	44,666	63,822	49
R-2	39,430	41,153	57,180	45
R-25	41,000	45,000	56,500	37
R-6	105,961	114,852	144,494	36
R-22	86,244	91,963	106,451	23
R-9			8,352	
R-7			22,680	
R-3			42,500	

Average of the percentages of increase in expenditures for salaries, 1914 to 1924..... 87

*For the period 1918 to 1924.

Of the 23 schools for which comparative statements were available, 8 more than doubled their expenditures for salaries during the decade between 1914 and 1924.

A combined summary and comparison of the per cent of increase during the ten-year period preceding the survey, for the per capita cost, total expenditures, and expenditures for salaries, are presented as follows:

TABLE IV

Per Cent of Increase, 1914-1924

School	Per Capita Cost	Total Expenditures	Expenditures for Salaries
R-1	38	95	120
R-2	45	38	45
R-3			
R-4	32	40	100
R-5	66	152	101
R-6	60	42	36
R-7	35		
R-7 and 9		43	
R-8	138	306	206
R-9	18		
R-10	37	37	49
R-11	12**	75	73
R-12	29	45	74
R-13	44	16	68
R-14	59	51	60
R-15	69	71	59
R-16	83**	129**	186**
R-17	67	145	55
R-18	51*	57*	65
R-19	33		
R-20	43	59	84
R-21	75	25	161
R-22	46	6	23
R-23	39	35	106
R-24	73	38*	99
R-25	55	46	37
R-26	88	84	79
R-27			
R-28	67	74	105
Average	54	71	87

*For the period 1914 to 1919.
**For the period 1918 to 1924.

A further interesting comparison is afforded in the following summary of expenditures, in percentages, for the last fiscal year preceding the survey, for such items as trades teaching, food, upkeep of plant and buildings, salaries of teachers other than industrial, school equipment, and library.

At the foot of each item is given the average which may serve as the standard expenditure in each case.

TABLE V

Per Cent of Total Expenses for

School	Teaching Industries	Food	Upkeep of Plant, etc.	Salaries of Teachers	School Equipment	Library
R-1	5.9	17.5	4.8	40.6	4.	
R-2	9.	16.	10.	50.	3.	.5
R-3	20.	15.	10.	40.	5.	
R-4	7.	17.4	17.2	29.	3.7	1.
R-5	10.5	8.8	1.8	22.6	1.9	
R-6	4.3	14.6	3.6	20.	1.1	
R-7		19.1	13.4	21.6		.4
R-8	7.	17.5	10.	15.8	26.8	.6
R-9		12.8	4.8	27.2		
R-10	4.4	15.9	48.2	30.1	.1	
R-11	8.3	20.	6.1	24.7	.9	.2
R-12		25.7	1.8	22.1		
R-13	5.	12.	12.	31.	2.	5.
R-14	6.	16.	1.	28.	1.	
R-15	3.8	18.2	6.7	20.7	.7	
R-16	10.7	15.	47.8	24.5	1.3	.4
R-17	2.9	17.	5.	20.		
R-18	6.	25.	1.	28.	1.	
R-19	5.5	11.3		16.9		.2
R-20	5.4	16.4	6.1	33.3	.9	.4
R-21	1.5	11.	3.3	20.	1.	
R-22	7.9	21.4	13.	24.	.6	
R-23	7.2	23.	14.	30.	.4	.1
R-24	5.5	22.	5.5	30.	3.5	.3
R-25	14.	7.	2.	21.	2.	.8
R-26	5.6	17.	9.7	26.9	.5	.3
R-27	7.	17.	8.			
R-28	6.5	14.5	31.8	37.	7.	3.3
Average	7.	16.5	11.	27.2	3.1	.6

Finally, a more detailed analysis of the per capita cost is given for the last fiscal year preceding the survey (which was conducted during the school year 1924-1925) in the following table, at the foot of which are also appended the averages for the respective items.

TABLE VI

Per Capita Cost for

School	Maintenance	Repairs	New Bldgs.	Total
R-1	$333	$ 20		$ 353
R-2				528
R-3	240	25		265
R-4	579	31	$ 4	614
R-5	722	346	1,094	2,162
R-6	702	18		720
R-7	750	116		866
R-8	558	56	62	676
R-9	612	31		643
R-10	317	11		328
R-11	549	20		569
R-12	346	3		349
R-13	932	51	9	992
R-14	534			534
R-15	452	30		482
R-16	833	29	920	1,782
R-17	378	53	131	562
R-18	254	8		262
R-19	373			373
R-20	487	23	6	516
R-21	287	12	95	394
R-22	526	17		543
R-23	490	70		560
R-24	354	33		387
R-25	535	13		548
R-26	377	25		402
R-27	621	86		707
R-28	480			480
Average	$504	$ 47		$ 628

A tabular comparison will also help to illustrate the extent to which the schools included in the survey have succeeded in the decade preceding the study in obtaining funds for new buildings, for remodeling and repair of old buildings, and in increasing their acreage.

TABLE VII

School	Expenditures, 1914-1924, for		
	New Buildings	Remodeling and Repairing	Increase in Acreage
R-1		$ 20,749	
R-2	$900,000		84.
R-3	7,500	10,000	
R-4	26,617		
R-5	367,038	47,873	103.
R-6		48,998	
R-7	185,000	147,502	
R-8	60,877	213,907	
R-9			
R-10		44,293	64.5
R-11	102,248	43,260	
R-12		20,500	
R-13	34,697	64,642	
R-14		45,758	
R-15	70,000	10,000	
R-16	792,674	15,000	90.
R-17	113,753	25,763	
R-18		34,464	
R-19			
R-20	3,308	37,354	.5
R-21	183,500	135,500	
R-22	40,177	46,081	
R-23	103,000	44,289	
R-24	37,000	78,000	
R-25		31,500	
R-26		49,232	
R-27	110,000		
R-28			
Average	$184,552	$ 55,211	

CHAPTER IV

THE TEACHING FORCE OF PUBLIC RESIDENTIAL SCHOOLS FOR THE DEAF

Academic Teachers.—In 5 schools—each a large one—the general qualification demanded of applicants for positions on the teaching force is at least a high-school education. To this demand there is also added as a minimum requirement, in 17 other schools, a period of special training or experience, usually of one year's duration, although 2 of these schools set the latter qualification only for their oral teachers, and another makes the same requirement only for teachers of its primary department, teachers in the upper grades being compelled to show at least a normal school diploma. Four schools specify normal training at least for their teachers, and a high school education with 2 years of normal or college work is the requirement in one school, while still another demands that its teachers be graduates of a normal school and have special training for teaching the deaf.

It was hoped the study would make clear the extent of educational preparation possessed by teachers in the academic departments of schools for the deaf, and for this reason the schools were asked to indicate the proportion of their teaching corps (exclusive of the industrial departments) that consisted, in turn, of high school graduates, normal school graduates, and college graduates. However, the answers in some cases show a slight misunderstanding of the scope intended by the respective percentages. Thus, in some instances, the percentage of high school graduates given is exclusive of the percentage of those who were normal school as well as high school graduates, whereas, in other cases the corresponding percentage seems to include all high school graduates even though some of them were also graduates of a higher school. With this reservation, Table I (p. 31) is a summary of the situation as determined by the survey. The right hand

TABLE I

School	Number of Academic Teachers	Percentage of Academic Teachers who are						
		High School Graduates	Normal School Graduates	College Graduates	Men	Women	Hearing	Deaf
R-1					19	81	81	19
R-2	19	63	17	25				
R-3	24	80		20	20	80	50	50
R-4	15	66	40	33	33	67	73	27
R-5	16	25	38	32	13	87	94	6
R-6	28	100	82	14	14	86	86	14
R-7	16	100	94	88	69	31	75	25
R-8	35	100	20	8	6	94	86	14
R-9	8	100	100	50	13	87	100	
R-10	26	23	46	54	19	81	70	30
R-11	23	100	100	33	4	96	100	
R-12	16	46	46	30	25	75	75	25
R-13	30	45	20	45	23	77	87	13
R-14	56	63	18	20	9	91	89	11
R-15	18	89	11	6	6	94	89	11
R-16	30	100	53	13	10	90	83	17
R-17	30	90	10	10	10	90	94	6
R-18	43	63	19	33	17	83	77	23
R-19	11	100	63	44	18	82	73	27
R-20	20	100	75	30	5	95	90	10
R-21	17	60		40	12	88	58	42
R-22	43	94	6	2	2	98	98	2
R-23	21	19	53	28		100	100	
R-24	41	51	2	46	16	84	82	18
R-25	12	100	58	17	17	83	92	8
R-26	23	90	17	17	4	96	79	21
R-27	12	100	25	50	33	67	75	25
R-28	28	75	82	14	15	85	96	4
R-29	6				16	84	100	
Average of the percentages	24	76	44	30	16	84	84	16

half of the table also presents a summary of the proportions, among the academic teachers of the respective schools, of men and women, and of hearing and deaf teachers. The average given at the foot of the table, it should be understood, represents in each case the average of the percentages listed for the various schools in the respective columns. This method of compiling the averages has been followed in other tables appearing elsewhere in this chapter.

Industrial Teachers.—The range of qualification demanded of teachers of industries, not including teachers of physical culture, varies somewhat in the schools studied. In 9 schools, such instructors must possess a thorough knowledge of the trades they teach and the ability to impart to the pupils such instruction as is necessary. Some of these replies also add personality or character as a requisite. In 9 other schools, the qualification includes merely proficiency in the industries the instructors are employed to teach. Four schools set a high-school education in addition to special training or experience as a standard of acceptance, and 3 others demand of candidates a fair command of English with a thorough knowledge of the respective trades. Two schools fix no special standard other than general fitness.

The composition of the various corps of teachers in the trades departments of the schools included in the survey is disclosed by the following tabular percentage arrangement.

TABLE II

School	Percentage of Industrial Teachers Who Are			
	Men	Women	Hearing	Deaf
R-1	19	81	81	19
R-2	67	33	33	67
R-3	50	50	50	50
R-4	80	20	60	40
R-5	73	27	91	9
R-6			50	50
R-7				
R-8	64	36	64	36
R-9	100		67	33
R-10	50	50	50	50
R-11	50	50	83	17
R-12	67	33	17	83
R-13	60	40	50	50
R-14	53	47	53	47
R-15	57	43	57	43
R-16	67	33	50	50
R-17	73	27	73	27
R-18	46	54	70	30
R-19	50	50	50	50
R-20	50	50	67	33
R-21	60	40	40	60
R-22	43	57	79	21
R-23				
R-24	46	54	77	23
R-25	82	18	86	14
R-26	70	30	20	80
R-27	60	40	40	60
R-28	57	43	57	43
R-29				
Average	60	40	58	42

The table just constructed affords an interesting comparison with the corresponding table previously given for the academic teachers. This comparison is most effectively presented in the following summary of the different averages:

	Percentage of			
	Men	Women	Hearing	Deaf
Among Academic Teachers	16	84	84	16
Among Industrial Teachers	60	40	58	42

This shows a preponderance of men teachers, and a greater reliance upon deaf teachers, in the trades departments.

SALARIES

Eighteen of the schools visited furnished information as to the allowance granted teachers for board, room and laundry. The scale ranged from $22 to $50 a month, as follows:

1 school allows $22	1 school allows $39
2 schools allow $25	1 school allows $40
1 school allows $28	2 schools allow $44
1 school allows $30	5 schools allow $50
4 schools allow $35	

The average monthly allowance, based upon the above returns, would be $38.

The above data may be summarized in this wise:

$20 to $30—the allowance per month in 5 schools;
$31 to $40—the allowance per month in 6 schools;
$41 to $50—the allowance per month in 7 schools.

Only 12 of the 29 schools studied maintain a schedule of regular increases in salary for their teachers until the maximum is reached. Further, only 7 of these schools set a defintie period in which one may reach the maximum salary, this period ranging between 3 and 10 years. In 3 other schools this provision is more or less elastic, it being "no fixed time; about 10 years," "4 and sometimes 5 years," and "from 6 to 8 years, depending on preparation." Also, for only 10 of the 29 schools are the benefits of a pension plan available to the members of the teaching corps.

There is practically general agreement that within each school teachers are on the same plane socially. In a very few schools—3, the statement is qualified to this extent, that such a condition holds theoretically or officially; one other school admits that the social equality of its teachers, although theoretically true, does not exist in practice.

Salaries of Superintendents and Principals.—Detailed information pertaining to the salary scales in force for superintendents, principals, and head teachers was obtained in the reports of the survey.

The remuneration of superintendent or managing officer, where maintenance is furnished and where the duties of the office are distributed over the full year, was as follows:

Salary	Number of Schools
$1,500	1
1,800	1
2,200	1
2,400	2
2,500	2
3,000	5
3,600	2
4,000	3
4,800	1
5,000	2
5,500	1

The average salary of the superintendent, derived from the figures in the above 21 schools, is $3,324, with maintenance, for 12 months of service.

Executives who are in charge for a stated number of months, and who are granted maintenance, receive the following compensation: in one school, $1,000 for 10 months; in another $4,500 for 10 months.

A few of the 29 schools studied do not furnish maintenance with the salary of the executive officer. In one of these, the superintendent is on duty throughout the year and receives $3,700; in another he receives $3,300 for the same period, paying back per capita board for himself and his family. In one other school, the superintendent obtains $2,600 for a nine-months period of service, without maintenance.

In one school, the superintendent is furnished partial maintenance, that is, he receives "supplies"; in this case the salary is $2,500 for the entire year.

The salary scale for principals or head supervising teachers in the schools surveyed that employ such officials, and for whom information was obtained, is indicated in the following summary. As the terms of duty vary between 8½ and 12 months, it was thought desirable

to give the figures on a monthly basis, thereby permitting comparison.

A. With maintenance:

4 receive between $100 and $150 per month;
4 receive between $150 and $200 per month;
3 receive between $200 and $250 per month;
2 receive between $250 and $300 per month.

B. With partial maintenance:

1 receives $125 per month;
1 receives $183 per month.

C. Without maintenance:

1 receives $189 per month;
1 receives $200 per month;
1 receives $211 per month;
2 receive $310 per month;
1 receives $333 per month.

Salaries of Teachers.—The great differences exhibited in the various scales of salaries of teachers prevailing in the schools surveyed show a decided lack of a basic pay schedule. This condition is one of the major deterrents to the solution of one of the most pressing problems confronting educators of the deaf—the teacher problem. No further comment is necessary; the figures speak for themselves.

A. Academic Teachers.

I. With maintenance:

School	Minimum		Maximum		Months of Teaching
	Men	Women	Men	Women	
R-3	$ 500	$ 400	$ 800	$ 900	8
R-5	1,200				9
R-7	630	630			9
R-8				1,200	
R-9		630		945	9
R-11	1,600	750		1,950	10
R-12	1,000	900	1,350	1,000	8½
R-15		765		945	9½
R-17	1,500	500	1,500	1,050	9
R-19	810	720		945	9
R-20	1,200		1,600		10
R-21	1,000	600	1,200	1,000	9
R-23		300		1,000	10
R-26	1,000	750		1,200	9
R-27				1,100	

II. With partial maintenance:

R-7			3,300		9
R-25	1,350	1,000	2,150	1,650	9
R-29	630	450	675	720	9

III. Without maintenance:

R-1	1,400	1,150	2,000	1,500	9
R-2	1,500	1,000	1,800	1,500	9
R-4	1,300	1,300	2,400	2,400	9½
R-5		1,400		1,800	9
R-6	1,600	2,500	1,400	2,000	
R-7				2,700	9
R-9		1,305		1,575	9
R-10	1,500	1,050	1,850	1,350	9
R-13	1,500	1,080	2,000	1,620	
R-14	1,650	850	2,300	1,600	10
R-15		990		1,170	9½
R-16	2,000	1,600	2,200	2,200	10
R-18	1,620	765	2,000	1,620	9
R-19			1,125		9
R-20		1,000		1,800	10
R-24	1,440	900	1,530	1,485	9
R-27			1,500		
R-28	1,500	1,000	2,200	1,600	10

B. Teachers of Industries

(Including domestic art and science, drawing, etc.)

I. With maintenance:

School	Minimum		Maximum		Months of Teaching
	Men	Women	Men	Women	
R-1		$ 495			9
R-3	$ 750	600	$1,000	$ 800	8
R-6		420		660	
R-8		600		750	
R-12	630		750		8½
R-15	850	450	1,200		10
R-19	810			675	9
R-21		300		600	9
R-23	840	600	1,500	800	10
R-26	400		800		9
R-27			1,000	1,000	
R-28		700			10

II. With partial maintenance:

R-13	1,332	810	1,800	1,500	
R-25	1,000	1,000	1,550	1,500	9
R-29	630	450	900	675	

III. Without maintenance:

R-1	1,125		1,800		9
R-2	1,500	1,000	1,650	1,500	9
R-4	1,300	1,300	2,400	2,400	9½
R-5	1,350	1,000	1,900	1,400	9
R-6	1,200		2,200		
R-8	1,200		1,980		
R-9	1,920		2,880		9
R-10	1,080	650	1,140	1,050	9
R-11	1,700	1,100	2,100	1,920	10
R-14	1,000	400	1,500	1,600	10
R-15		1,100			10
R-16	1,900	1,400	2,300	1,900	10
R-17	1,500	600	1,500	700	9
R-18	1,000	720	2,400	1,440	9½
R-19	1,350				9
R-20	1,380	1,000	1,560	1,500	10
R-21	450		900		9
R-24	1,215	900	1,215	1,215	9
R-28	1,300		2,400	1,225	

C. Deaf Teachers.

I. With Maintenance:

School	Minimum		Maximum		Months of Teaching
	Men	Women	Men	Women	
R-1	$1,400	$1,400	$2,000		9
R-7	630	630		$1,125	9
R-8				1,200	
R-11	1,600	750		1,950	10
R-12	1,000	1,000	1,350	1,000	8½
R-15		765		945	9½
R-17	900	700	900	700	9
R-20	1,380	600	1,560	800	
R-21		600		900	9
R-23	840	350	840	500	10
R-26	400	700	800	1,200	9
R-27				1,100	

II. With partial maintenance:

R-9			2,400		9
R-29	1,350	1,000	2,150	1,650	9

III. Without maintenance:

R-2	1,500	1,000	1,800	1,500	9
R-3	500	400	1,000	800	8
R-4	1,300	1,300	2,400	2,400	9½
R-6	1,800	1,000	2,600	2,000	
R-9			2,880		9
R-10	1,350	1,050	1,850	1,350	9
R-13	2,000	1,080	2,000	1,080	
R-14			2,200	1,600	10
R-15		990		1,170	10
R-16	1,900	1,400	2,300	1,600	10
R-18	1,620	765	2,000	1,620	9
R-24	1,440	1,215	1,530	1,260	9
R-27			1,500		

The information contained in the foregoing tables may be condensed in the following manner, the salaries being reduced to the common factor of compensation for each month of service.

A. With maintenance:

	Average Minimum Men	Women	Average Maximum Men	Women
Academic Teachers	$114	$ 70	$144	$120
Industrial Teachers	79	56	114	81
Deaf Teachers	105	84	131	112

	Highest Minimum Men	Women	Highest Maximum Men	Women
Academic Teachers	167	106	167	195
Industrial Teachers	94	75	150	100
Deaf Teachers	160	156	222	195

	Lowest Minimum Men	Women	Lowest Maximum Men	Women
Academic Teachers	63	30	100	99
Industrial Teachers	44	33	88	67
Deaf Teachers	44	35	84	50

B. Without maintenance:

	Average Minimum Men	Women	Average Maximum Men	Women
Academic Teachers	165	118	207	186
Industrial Teachers	141	98	193	159
Deaf Teachers	149	109	216	159

	Highest Minimum Men	Women	Highest Maximum Men	Women
Academic Teachers	200	160	253	300
Industrial Teachers	213	140	320	253
Deaf Teachers	190	140	320	253

	Lowest Minimum Men	Women	Lowest Maximum Men	Women
Academic Teachers	137	85	125	123
Industrial Teachers	50	40	100	78
Deaf Teachers	63	50	125	100

In 12 of the schools studied there seems to be no distinction between hearing and deaf teachers so far as salary is concerned; in each of these schools the same scale applies. In one of these schools, also, this equality extends to all teachers, in the industrial department and otherwise.

In 7 schools, the standard of pay for deaf teachers does not equal that for hearing teachers, although in two

of these cases the maximum for deaf women teachers is the same as that for all women teachers on the same staff; in another, the minimum for deaf women teachers is not so low as that for hearing women teachers although the maximum is not so high; and in one other case the only difference is a lower minimum for male deaf teachers than for male hearing teachers.

In 4 schools, deaf men teachers obtain the same salary as hearing men teachers, and in one of these cases deaf women on the staff show a higher minimum than the hearing women. In the other 3 of this same group of schools, deaf women teachers do not fare so well as the hearing women teachers in maximum pay.

In 3 schools deaf men are the highest paid members of the teaching corps.

Nine schools indicate a higher salary scale for instructors in the industrial departments than for those in the academic, and one other school reports the same pay schedule for its industrial men teachers as for other men teachers.

MATRONS AND SUPERVISORS

Since a good portion of institution life deals with custodial care, it was thought desirable in the course of the survey to obtain information concerning matrons and supervisors, the qualifications demanded of such officers, and the salaries given them.

In a great majority of the residential schools visited—22 out of 29—the requisite qualification for matron covers a varied range, all, however, suggesting in essence that she must possess character, an understanding of how to deal with children, and a specialized knowledge of household economy, including dietetics. Three schools state frankly that they require no specific qualifications, obtaining for this position the best material they can secure. In one school studied, the superintendent's wife officially takes on the duties of the matron, and in one other school

the position is filled only after a civil service examination of applicants.

In the 26 schools making a report the maximum salary received by matrons varies between $420 and $1,400, the minimum between $300 and $1,400. In a number of cases there is no distinction in scale, the minimum and maximum being alike. The average maximum salary is $883; the average minimum is $789.

In tabular form the scale is as follows:

Minimum salary for matrons		Maximum salary for matrons	
Salary	Number of Schools	Salary	Number of Schools
$ 200 - $ 400	2	$ 400 - $ 600	6
401 - 600	6	601 - 800	8
601 - 800	6	801 - 1,000	2
801 - 1,000	5	1,000 - 1,200	6
1,001 - 1,200	6	1,201 - 1,400	4
1,201 - 1,400	1		

The comparative importance of qualities demanded in supervisors in the schools giving information on this matter may be expressed in the following arrangement, the trait stressed most often being listed first, that considered next in importance following, and so on.

1. Fair education
2. Ability to control children
3. Love for children
4. Character
5. Culture
6. Knowledge of duties
7. General fitness
8. Experience
9. Personality
10. Coöperation
11. Adaptability

The minimum salary (with maintenance) for supervisors in the 21 schools making a report varies from $250 to $720, the average being $433. The maximum ranges from $300 to $1,000, the average being $604.

Summarized, the salary scale that prevails for supervisors in the same group of schools is as follows:

Minimum Salary	Number of Schools	Maximum Salary	Number of Schools
$ 200 - $ 300	4	$ 300 - $ 400	3
301 - 400	4	401 - 500	5
401 - 500	9	501 - 600	5
501 - 600	3	601 - 700	3
601 - 700	0	701 - 800	2
701 - 800	1	801 - 900	2
		901 - 1,000	1

Social equality seems to prevail in the great majority of the schools surveyed, matrons and supervisors having the same standing in this respect as the teachers, regardless of salary differences. Such a condition prevails in 22 of the 28 schools making reply. In 2 other schools, the matrons are on the same basis socially within the school as the teachers, but the position of the supervisors is largely determined by their own personality. For one school the answer is that "officially" all the above officers are socially on the same basis. Another school declares "not entirely," although there is considerable "overlapping." One school reported frankly in the negative. In still another instance, this question cannot be determined as the teachers do not board in.

School Administration.—The members of the teaching force, in 12 of the 29 schools considered, are governed directly by the superintendent. In 10 schools they are under the combined control of both the head of the school and the school principal, and in 7 other schools they are governed indirectly by an academic principal who in turn is answerable to the superintendent.

Educational Advancement of Teachers.—Twenty-seven of the schools furnish educational periodicals in varying numbers either individually or for the general library to which members of the teaching staff have access. The following summary of the titles listed by the 24 schools giving such information includes, in order of frequency, each magazine subscribed for by at least 2 schools.

American Annals of the Deaf	21
Volta Review	12

Normal Instructor and Primary Plans	10
Primary Education	8
Oralism and Auralism	5
Educational Review	5
Journal of Education	3
School Life	3
Industrial Arts Magazine	2
Kindergarten	2
Elementary School Journal	2

Only 9 of the 29 schools considered give teacher training courses. As this subject is to be considered in greater detail as a separate topic, these figures will suffice at this point to indicate their part in the general weakness of school policy. Since teaching the deaf is a highly specialized art, one is led to wonder, in view of the meager output of organized effort, how and where trained teachers are to be obtained.

In more than half of the schools—16 of the 29—teachers do not receive special promotion for summer work or educational advancement. Qualified answers are given for 3 other schools; in one of them extra professional study is taken into consideration when increases in salary are decided upon; in another, certain cases receive special consideration; and in the third, the answer is "They would" —that is, *if* the teachers took up outside work or study to improve professionally.

For the remaining 10 schools, it is definitely the policy to give special recognition to teachers who take steps for improvement.

A little more than half of the schools surveyed give any information as to the percentage of their teaching force enrolled as members in organizations either of instructors of the deaf or of educators in general. The answers obtained make a pallid showing. Only 3 out of 16 had any representation in an association other than of instructors of the deaf, but in each of the 3 schools *all* the teachers were members, the society in each case, also, being the state teachers' organization.

The answers seem to indicate also that of the major

societies devoted to the problems of the deaf, teachers seem to favor the American Association to Promote the Teaching of Speech to the Deaf, 2 schools showing a complete membership, and two others with more than half of their staffs enrolled. Four other schools had between 25 and 50 per cent of their teachers as members in the same association, and 8 schools fell below 25 per cent. The Convention of American Instructors of the Deaf follows with 4 schools that maintained a membership between 25 and 50 per cent of their respective corps, and 12 that fell below 25 per cent. The answers also show that only one of the 16 schools had a membership as high as 20 per cent of its teachers in the Society of Progressive Oral Advocates, all the others varying between 0 and 15 per cent.

It is not the practice of schools to pay the expenses of teachers to attend meetings of professional organizations, 19 out of 25 that gave information replying to that effect. In the other 6 schools the practice is followed only partly, or occasionally.

A majority of the schools, 17 of the 29, report having adopted one method or another, exclusive of ordinary teachers' meetings, to promote professional growth on the part of their teachers, methods that are diverse, but none the less decidedly attractive. As such practices are another way of spelling progress, they are given here, each properly labelled with the same school key number used in other chapters of this report.

R-2. Encouragement to teachers to visit other schools for the deaf.

R-6. Teachers encouraged to study together and to take outside courses. Expenses are frequently paid for teachers of special phases of the school work who visit other schools.

R-7. Instructors are urged to study at nearby universities.

R-10. Lectures by college professors.

R-11. Meeting together to study special phases of the work. Demonstration work before groups of teachers. Encouragement to take special courses in nearby colleges.

R-13. Special group meetings. Use of questionnaires.

R-14. Encouragement for special study outside.

R-16. Library on pedagogy supplied for teachers. Teachers granted leave with full pay for attendance at summer schools and

organization meetings. Permission once a week to attend afternoon classes in city.

R-17. During the summer preceding the survey, half the expense of the course at the Clarke School summer session for teachers paid for each of six members of the staff.

R-18. Encouragement to join in state teachers' organization.

R-20. Teachers encouraged to study new books on education. Teachers also attend lectures for public and high school instructors. Visits to other schools.

R-21. Teachers urged to attend summer schools.

R-23. Weekly lectures on principles and methods of education by a college professor. Other lectures monthly.

R-25. Summer school work, extension course study and attendance at lectures encouraged.

R-26. Bonus for summer school attendance.

R-28. Teachers are allowed a week's leave of absence with pay to visit other schools.

Teachers' meetings, as a rule, are held once a month during the school session, with occasional special meetings for group grade meetings or to discuss special subjects. These gatherings, whether by the reading of prepared papers, or by lectures, discussions or demonstrations, serve to better correlate the work of teachers, give inspiration and encouragement, and provide a forum for exchange of opinion on school matters—all with the purpose of improving both the morale and the efficiency of the school work.

TRAINING OF TEACHERS

As has already been stated, only a few of the schools studied—9 of the 29—maintain a teachers' training department. Further, as 2 of the schools comprise a single institution, with the training course serving both, this study really considers only 8 courses.

The negative attitude may be easily summed up. In many schools neither the facilities nor the funds are available for this purpose; in others the school work is such that it would be a hardship to impose the added burden of normal training. Thus, a departmental principal of one of the schools visited gave it as his opinion that his own school was not good enough to undertake teacher training. In addition, he did not wish to encumber his staff with

teachers who are "half-baked," but preferred to obtain instructors after they had been trained efficiently and had already acquired the necessary experience elsewhere. Of course, this is excellent philosophy—for his own school at least. But it is not difficult to understand what the outcome would be if all the other schools were to take the same position.

Before proceeding to an analysis of the various courses of training offered in the schools already referred to, it is necessary to explain the nature of one of them which in reality is only a preliminary sort of training. When the school in question is compelled to employ untrained teachers in the oral department, the supervising teacher conducts classes in the "Formation and Development of English Sounds," "Mental Development and Course of Study," "History of the Education of the Deaf," "Physiology of the Nose, Throat and Ear," "Visible Speech," and whatever seems necessary to help the individual teachers with their respective classes. Such teachers, however, are not considered "trained" until they have completed the course at one of the best known training schools for teachers of the deaf. A similar plan is also followed with manual teachers under the direction of the principal of that department, who is developing a "normal course for manual teachers," the need for which on a more widespread scale is quite evident.

Three of the remaining 7 schools set no age limit as a requirement for admission to the training class. In the others it is 18, 19, 19 or over, and 21 to 25 years, respectively. All of the schools set a minimum requirement of high school education as a condition of entrance, with preference for those with normal school or college training. One school makes the definite requirement of at least 2 years of normal school or college work, and another course usually considers only candidates who have already received a college diploma.

Only 2 of the 7 schools require examinations of candi-

dates, which in one case consists of the state eighth grade subjects. All set a requirement of good health, with normal speech and hearing. In no case is any distinction made as to religion.

Contemplation of the capacity of the various classes is hardly encouraging when one considers that during the year of the survey the total number of academic teachers in the 29 residential schools was 684, and that the number of such teachers on the staffs of the schools offering courses of training was 199. The number that can be trained annually in the last-named schools are as follows:

3 to 6	1 school
4 to 6	2 schools
5	1 school
8	2 schools
10	1 school

making a maximum of 35. In view of the normal increase in pupilage, not to say anything of the large number of teachers who annually drop out of the work, the capacity of training classes becomes a matter of serious concern.

Only 6 of the schools offering training courses give figures as to the number trained during the 5 years preceding the survey, the total being 127.

Four of the schools set a fee as charge for the course in training; in one case $125 for the school year, in 2 others $150 for the same period, and in another $250. In one other course, members of the normal class who are college graduates receive a stipend during the course of study, and the degree of Master of Arts if they complete the year's work satisfactorily.

Typical outlines of the course of training are the following:

A

1. Speech-reading
2. Articulation
3. Kindergarten work
4. Sense training

5. Child study
6. Psychology
7. Language
8. Arithmetic
9. Preparatory geography
10. A course of study covering the first 5 years' work in school with detailed lesson plans on the underlying principles of the various subjects.

B

1. Visible speech
2. Formation and development of English sounds
3. History of the education of the deaf
4. Anatomy of nose, ear and throat
5. Muller-Walle system of lip-reading
6. Development of language by grades
7. English grammar

C

1. History of the education of the deaf
2. English
3. Observation of classwork
4. Speech and speech-reading
5. Psychology
6. Sign language and the manual alphabet
7. Practice teaching
8. Methods of teaching the deaf

Including the information from 4 other schools that formerly maintained a training department with that from 5 still active schools giving information, a total of 348 teachers have been trained altogether, with 198, or practically 57 per cent, still in the work.

CHAPTER V

PUBLIC RESIDENTIAL SCHOOLS FOR THE DEAF AS SCHOOLS

That the education of the deaf is not formally a charitable undertaking is strongly stressed. For 21 of the 29 schools studied, the statement is made that by law they are not charitable institutions. Three other schools nominally do have this complexion, that is, they are subject to inspection by the state board of charities although otherwise under the supervision of the state board of education. One school declares it is legally a charitable institution only as it relates to indigent pupils. Four schools state outright that they are classed as eleemosynary institutions.

Of the schools studied not one includes the word "asylum" in the official name. Also, only 2 of the 29 schools still retain the word "dumb" in their title, and 3 others the term "deaf-mutes." All this may seem a commonplace statement of fact to those now concerned with the education of the deaf, but a glance backward will reveal the trend. For the school year closing the past century, 25 years before the survey, 11 of the same 29 schools contained the word "dumb" in their official names, 6 the word "mute" or "mutes," 1 was still an "asylum," and still another was a "school for defective youth."

For 16 schools there is no compulsory school law applying to deaf children. The other 13 institutions do operate under one form or another of compulsory attendance. Further, whereas for 13 schools public officials are compelled by law to notify the superintendent of children who ought to enter such schools, no such requirement is in force for the remaining 16 schools studied.

For only 3 of the 29 schools is the report made that the method of instruction is fixed by law, the oral method in each of these cases being the method prescribed.

Five schools may not receive pay pupils. The 24 other schools may do so, although 7 of them apply this rule only to children from other states.

ADMISSION OF PUPILS

Information concerning the age limit within which pupils are admitted was obtained from 18 residential schools. In one of these there is no legally prescribed limit, and in 2 other schools the only limitation is that children must be of "school age." Twenty-one is the latest age at which pupils are accepted in 2 schools. The rules for the remaining schools may be summarized as follows:

2 schools set 5 years as the earliest age of admission.

1 school sets 6 years as the earliest age of admission.

The period of acceptance lies between 5 and 20 years in 1 school, between 5 and 21 in another; between 6 and 20 in another; between 6 and 21 in 3 cases; between 7 and 20 in one more; and between 7 and 21 in 3 others.

It must be stated, however, that in some of these schools when exceptions to the set rule come up, discretionary power rests with the managing board.

In addition to age limitations there are other general restrictions as to admission of puils. In most cases only children whose hearing is so impaired that they cannot maintain normal progress in the ordinary public schools and who can profit by training in a special school for the deaf are accepted. Feeble-minded children are as a rule specifically excluded.

The length of school life permitted is not always rigidly set, as the information obtained from 18 institutions reveals. Two schools state specifically that 13 years is their allotted school term for a pupil, and one places it at 14. In the other 15 schools, the length of school life is indeterminate, final decision usually resting with the managing board. In 3 of this latter group of schools there is no legal limit whatever, a pupil being permitted

time "till course is finished." For the remainder there are as many different terms of schooling permitted as there are number of schools, indicated as follows:

(a) the matter is left to the board and superintendent;

(b) restricted only to those eligible, 7 to 21 years of age;

(c) 14 years under certain conditions;

(d) 7 years after the age of 12;

(e) 12 or more years as authorized by the board;

(f) 5 to 18 or 20, and longer if the pupil is a candidate for entrance to college;

(g) 10 years, and in exceptional cases 12 or 13 years;

(h) 12 to 15 years;

(i) not fixed by law; 13 years permitted;

(j) 12 years; in some cases 13;

(k) 12 years, although this rule is not ironclad;

(l) the length of school life agrees with that legally permitted for the schools of the state concerned.

Of the 21 schools that gave answer, 15 declared they held no distinction as to race or color in the admission of pupils, and 6—mainly southern schools—admitted only white children, although separate provision is made for colored pupils either in a distinct department or in another special school elsewhere in the state.

The existence of a deplorable condition with respect to the feeble-minded deaf is brought out very plainly by the information obtained from the questionnaires. Only one school states clearly, and one other school implies, that such children find a place at the state school for feeble-minded. Two other schools reply in the affirmative to the question as to whether any provision is made for colored or feeble-minded deaf children in the admission of pupils. In theory, then, no definite method prevails to provide for those deaf children who mentally are below the normal in the remaining 25 schools included in the survey.

There seems to be a marked tendency to place the

authority to admit or to decline pupils with the head of the school, 15 answers being to that effect. In 6 other schools, also, the managing officer exercises this power but with the approval of the board or state directors of education, depending upon the system of central control. In 4 cases this authority lies finally with the board of trustees.

THE SCHOOL CURRICULUM

Academic Course.—The course of study in the literary department is prescribed by law in only one of the 28 residential schools making reply. Six of the same schools pattern their course of study on that which is used in the public schools of their respective states, and 10 do so with the proper adaptations, or for the upper classes only. Twelve schools follow their own course of study.

The curriculum covers 12 years in practically two-thirds of the schools giving information—that is, 17 out of 26—one of which also allows an added year for college preparation. In three schools the course covers 13 years, and in five others it is 10, 12-14, 14, 15 and 16 years, respectively. At Gallaudet College the course is five years.

The course in 20 of the 28 schools under consideration provides specific training for citizenship; in three others this is done only in a general way, and in the remaining five no definite provision along this line is made.

Manual Training.—In 12 out of 27 schools the children receive no preliminary training as preparation for the course in manual training. Such pre-vocational work is assigned in the other 15 schools, but under varying names—primary woodwork, handicraft, arts and crafts, sloyd work, handwork, or construction work.

There seems to be no preponderant procedure in the method by which trades are chosen for pupils. Of the 27 schools under study, 9 decide this matter by a combined consideration of the desire of the parents, the wish or inclination of the pupil, and the judgment of the school officials; in 7 other schools the trade chosen is the one for

which a child is best fitted or for which he shows special aptitude. In two schools the decision is left to the inclination of the pupil or the wishes of his parents, and in two other schools both of these factors determine the course to be followed. Four schools permit the pupil primarily to decide this question for himself, although the judgment of school officers and the advice of parents sometimes influence the choice. In one school fitness for a trade is determined by the "head teacher," and in another case by the school principal and teachers, who also take into consideration suggestions from parents in many instances. One other school follows the plan of putting the "best boys (mentally)" in the printing shop.

The trades taught are selected for their educational value in 16 of the schools studied, and in one other case also this is made the aim as far as possible. The educative aspect governs only in part the selection of trades to be taught in 9 other schools, the practical value being given due weight. Of the last-named group of schools printing particularly, in one case, and printing and woodworking, in another, serve largely for their educational value.

Another factor affecting the selection of trades to be taught in school is that concerned with conditions near the pupil's home. Sixteen schools declare that they are guided by such conditions, although most of these schools also state that the educational value of trades is an influencing factor. The economic situation prevailing in the locality from which the pupil comes is only partly or occasionally considered by seven schools. One other school states frankly that it pays no special attention to this matter.

Correlation Between Manual Training and Academic Work.—The data produced on this subject by the survey may be recorded by proceeding from the negative to the affirmative. In three of the schools visited there is no correlation between these departments other than

that the trades instructors themselves teach the language of their respective industries. Five schools do not answer on the question. Four other schools report that very little is done to correlate manual training with the work of the literary department. In all of the other schools visited—a majority—such correlation appears in one positive form or another. In nine schools the activities of the shops furnish subject matter for work in the language or mathematics classrooms. Four schools also accomplish the necessary correlation by systematic coöperation between instructors of the two departments, and in one other school this is brought about by instructors who teach in both departments. One school relies upon "frequent visits of academic classes to manual training classes for 'language study'." Another school concentrates upon building up a language foundation as a prerequisite for the trades. And finally, in one other school, the shop instructors are required to use language charts, the classes visit the shops, and the academic teachers are given trades vocabulary to teach.

Only four of the schools studied replied that they employ set examinations to test the efficiency of pupils in trades teaching. One school also resorts to "project assignments" for the same purpose. Otherwise a majority, 15 in number, judge the capability of pupils in industrial work simply by the quality of the work completed during the course. Another school adopts the same standard of judgment, but also considers "the measure of the mastery of the trade language taught." Much the same method is followed in three other schools where the judgment of the trade teacher in charge supplants periodic examinations. In one other school the trades efficiency of a pupil is judged by the standards that prevail in actual shop practice outside the school.

Shop language, according to the answers received, is taught in most of the schools visited—in 22 of the 27 making a statement. In the remaining five, this subject

receives attention only indirectly. In the great majority of the schools, also, the language of the trades is taught by the shop instructors—the case in 20 of the 27 schools considered. In five schools the teachers of the literary departments share this responsibility with the trades teachers. In one case this is attended to by the academic teachers alone, and in one other school a special teacher of shop language is employed.

The instructors of the trades, in a majority of cases—in 16 of the 27 schools—make a practice of conferring with the superintendent, the principal, or instructors of the academic department as to the language principles pupils should use. In four other schools there is a semblance of such coöperation, although it is neither systematic nor regular. Approximately one-fourth of the schools—seven—make no efforts along this line.

The purpose of the trade departments in schools for the deaf is definitely not to earn money, two-thirds of the schools concerned declaring to that effect. Of the remaining one-third, seven schools admit that to a limited extent some, if not all, of their industrial departments do earn money; one school answers both "No" and "Yes," and in one more case the trades work is definitely money earning.

In practically every case it is customary for some, or most, of the members of the trades teaching staff to attend to repair work about the buildings or grounds, there being only two of the twenty-seven schools making a report where this practice is not followed. It must be stated, however, that in many instances this repair work serves as the basis for instruction.

In every one of the residential schools studied, trades pupils are engaged in repair work, although the extent to which this practice is followed varies. Further, it often has an instructional purpose.

Eleven of the 28 schools giving information do not keep a record of the occupation of pupils after the

latter have left school. Eight state that they do, at least as far as possible. Four schools at the time the survey was made had just begun such a practice. The remaining five schools studied have kept no systematic official record, but in a general way are in touch with what former pupils are doing.

Rhythm Training.—The great majority of schools for the deaf, judged from the information obtained in the survey, make rhythm work a systematic part of the school program. Of the schools considered, 22 give definite rhythm training, four do so to a limited extent, and two do not undertake this work at all.

Physical Training.—All but four of the 26 schools for which information is available provide a systematic course in physical training for their pupils. However, in 11 cases the system, although regularly conducted in classes, does not follow any particular school of gymnastics. In five schools it takes the form of military setting up exercises, especially for the boys. Three schools have adopted the Swedish system, and one each the Sargent method and the Ling and John system. One school also has this phase of its work directed by the city bureau of recreation.

Regularly organized sports are maintained in practically every case. For boys, every one of the 27 schools reporting provides baseball and basket ball. Football in 18 schools, tennis in 10 schools, and field and track in 10 schools are next. Then follow, in the order of frequency, soccer (5), "games" (5), swimming (3), volley ball (3), and handball (2). Wrestling, hockey, and boy scout activities are mentioned once each. For girls the leading sport seems to be basket ball, (in 23 schools). Tennis (14), volley ball (10), indoor baseball (8), "games" (6), track (4), swimming (3), hiking (2), hockey (2), handball (1), girl scout activities (1), captain ball (1), gymnastics (1), follow in the order given. One school maintains for its girls no organized sports

other than the usual playground activities and another school reports simply that no sports are carried on by the girls "with outside teams."

The regular physical training for younger children emphasizes play as well as the more systematic form of exercise. In most of the schools studied it consists of exercises and games, or games with the use of playground apparatus. In a small number of schools it comprises calisthenics and drills, or regular exercises in the classroom.

In only 12 of the 29 schools visited does the physical director make regular tests. Further, in some of these schools the examination consists of nothing more than weighing the children. A partial examination of the children annually by the physical director is the practice in three of the 12 schools, twice a year in six, monthly in two, and in one school the children are weighed once a month and their height recorded every three months.

With but few exceptions the schools give regular training in hygiene, although there is the tendency to center such training on the pupils of the upper grades. The report in a majority of the cases—18—suggests that the nature of the training in hygiene is largely theory, given by the teacher in the classroom, often with the aid of a textbook, as a part of the regular course of study. In a number of other schools—four—this is supplemented with practical health instruction by supervisor, matron or house mother. In two cases, this work is conducted by the department of physical education with the coöperation of the members of the household staff.

A plan of especial merit, employed with great success in one school, is the following:

> We have special instruction in health and sex matters for both sexes. A woman teacher instructs the girls; and a man teacher, the boys. The course is thorough and runs throughout the year. It includes all the delicate matters of personal hygiene and personal purity which can not well be discussed freely in classes where both sexes are present.
>
> These courses we consider the most valuable in our curriculum,

as we can see a marked improvement in the morals of our pupils as a direct result of these frank, wholesome lessons.

Moral Training.—Every residential school in the survey recognizes the need of, and conducts, a course of moral training. Except for three schools, all have Sunday-school classes. In only one case are these in the care of an "outside church"; in all the others teachers of the school staff are in charge. Each school, also, conducts regular chapel exercises, although in one instance this takes the form of only morning devotion in class. The tendency is to have the members of the teaching staff, with the principal and superintendent, take over this work, such being the case in 24 schools, in 14 of which, however, only men teachers are called upon. Some schools occasionally invite outsiders, ministers or visitors to lead the exercises. The school principal alone, in two schools, has charge of the regular chapel services; in one other instance it is a special religious instructor, and in another case an ordained member of the clergy has charge.

As a general rule chapel services are conducted by manual spelling and signs, 16 schools answering to that effect. A diversity of methods prevails for the other schools visited. Thus, four schools employ only speech, one school uses manual spelling entirely, one relies only upon signs, one uses speech and spelling, another speech and signs, and two depend upon all three methods, speech, spelling, and signs. Further, in one case, it is speech with oral pupils and spelling with the manual pupils.

The pupils in most schools for the deaf do not go home for religious training on the Sabbath Day. In only one of the 28 schools was an affirmative reply given to a question on this subject; in one other most of the children go home for this purpose, and in 4 others only some do.

The schools seem equally divided on the policy of permitting their pupils regularly to attend outside secta-

rian services. Further, those schools that do so, limit the practice to children of certain denominations only, and in a few cases only to those of one church. Also, in a few of the schools that do not as a practice permit regular attendance at outside church services, individual children occasionally attend the church of their preference.

Postgraduate Work.—Eleven of the schools that answer offer nothing in the way of a postgraduate course. The 16 schools that do so vary in the type of work their graduates may take up. Thus, 6 prepare pupils who are candidates for entrance to Gallaudet College, and base the course upon the requirements of that institution. Three additional schools, besides offering postgraduate preparation for entrance to Gallaudet College, also provide postgraduate industrial training in worthy cases. Another school also occasionally offers extra help in preparing a graduate for a college course in general or in perfecting him in one of the grades. In 5 schools, deserving pupils are given the opportunity to continue a year or two after completing the regular course, either in academic work or to acquire greater efficiency in a trade. In one other institution special cases are considered separately and given particular courses.

Textbooks.—To help determine the standard basis of the general course in schools for the deaf, a list of the textbooks used in the various subjects was obtained from the residential schools visited during the survey. These lists were analyzed, and an epitomized list for each subject made out in which only those books used in at least two of the schools are named. The results are given in the series that follows. The number after each title indicates the frequency with which a book was named, and a star before a name indicates a book that was prepared by a teacher of the deaf.

ENGLISH

27 Schools Reporting

*Croker, Jones and Pratt, "Language Stories and Drills"	22
*Sweet, "First Lessons in English"	16
*Willoughby, "Direct and Indirect Quotations"	12
*Upham, "Language Drill Stories"	11
*Upham, "Beginner's Book"	11
*Upham, "What People Do"	11
Longman, "Grammar"	11
*Upham, "Question Book for Second Year Classes"	10
*Stevenson, "Nature Facts"	7
*McKeen, "Stories in Prose and Rhyme"	5
*Jones, "A Course in English"	5
*Northampton Reading Charts	4
*Smith, "English Phrases and Idioms"	4
Arnold and Kittredge, "Mother Tongue"	4
*Fuller, "Illustrated Primer"	3
Kellogg, "Stories for Language Study"	3
Potter, Jeschke, and Gillet, "Oral and Written English"	3
*Jenkins, "Talks and Stories"	2
*Hammond, "Story Reader"	2
Hyde, "Two-Book Course in English"	2
Maxwell, "Introductory Lessons in English Grammar"	2
Pearson and Kirchway, "Essentials of English"	2
Hoenshel, "Elementary Grammar"	2
Everson and Bender, "Modern English"	2

It is significant that of the 24 books listed above, 15 were prepared by teachers of the deaf and, further, that 6 of the 15 are practically the leading six on the list. It is apparent then that the needs of deaf children are best understood by those who teach them.

The list for mathematics shows greater diversity, with no particular favoritism. The leading position of the first book is to be explained probably by the fact that it is the one recommended for study by candidates for entrance to Gallaudet College.

MATHEMATICS

27 Schools Reporting

Wentworth, "New School Algebra"	14
Walsh, "Primary Arithmetic"	7
Thorndike, "Arithmetic"	5
Hamilton, "Essentials of Arithmetic"	4
Milne, "New York State Arithmetic," Books I and II	4
Milne, "Progressive Arithmetic"	4
Wentworth and Smith, "Arithmetic"	4

Harvey, "Essentials of Arithmetic"	3
Stone and Millis, "Primary and Intermediate Arithmetic"	3
Wentworth, "Grammar School Arithmetic"	3
Milne, "Elements of Algebra"	3
Walsh, "New Grammar School Arithmetic"	3
Van Tuyl, "Complete Business Arithmetic"	3
*Kent, "Manual of Arithmetic"	2
Heath, "Primary Arithmetic"	2
Smith, "Modern Primary Arithmetic"	2
Gray, "Numbers by Development"	2
White, "Complete Arithmetic"	2
Wentworth and Smith, "School Arithmetic"	2
Wentworth and Smith, "Work and Play with Numbers"	2
Wentworth and Smith, "Algebra"	2
Wentworth and Smith, "Plane Geometry"	2

It is equally significant that in the foregoing list only one of the books was prepared by a teacher of the deaf. One school, the Institution for the Improved Instruction of Deaf-Mutes, employs a book, still in manuscript form, written by a member of its staff, Mrs. T. F. Driscoll. In one other school, no textbooks are used for this subject, the subject material being developed by the teachers with the guidance of the school principals. Practically the same situation prevails in another school where only one text was named, but in this particular case the superintendent has made a thorough study of the psychology of the subject and, instead of depending upon outside texts, has personally built up for his staff a complete course in the subject.

The prevailing opinion is that deaf children find the study of arithmetic particularly difficult, largely because of the language problem, and when textbooks in this subject are prepared by competent persons who understand what the difficulty is, then will deaf children make greater progress in it.

HISTORY

27 Schools Reporting

*Beattie, "Story of America for Little Americans"	13
Montgomery, "Leading Facts in American History"	10
Montgomery, "Leading Facts in English History"	10
Davis, "Stories of the United States for Youngest Readers"	9
Montgomery, "Elementary American History"	8

Montgomery, "Beginner's American History"	7
Eggleston, "History of the United States"	5
Mace, "Beginner's History"	5
Mace and Tanner, "Story of Old Europe and Young America"	5
Gerson, "History Primer"	4
Beard and Bagley, "First Book in American History"	4
Barnes, "Elementary History of the United States"	4
Terry, "History Stories of Other Lands"	4
Montgomery, "Advanced American History"	3
White, "Beginner's History of the United States"	3
Eggleston, "Stories of Great Americans"	3
McMaster, "Primary History of the United States"	3
Beard and Bagley, "History of the American People"	2
Higginson and Channing, "English History"	2
Mace and Petrie, "American School History"	2
Gordy, "American Beginnings in Europe"	2
Gordy, "Elementary History of the United States"	2
Tappan, "England's Story"	2
Miner, "School History of England"	2

In the above list, also, the commanding position is assumed by a book written by one who teaches the deaf.

GEOGRAPHY

27 Schools Reporting

Frye, "First Book in Geography"	14
Brigham and McFarlane, "Essentials of Geography"	13
*Beattie, "First Lessons in Geography"	12
*Stevenson, "Primary Geography"	8
Shepherd, "Geography for Beginners"	5
Maury, "New Elements of Geography"	5
Tarr and McMurry, "New Geographies"	3
Frye, "Home Geography"	2
Houston, "Elements of Physical Geography"	2
Tarr, "New Physical Geography"	2
Frye and Atwood, "New Geographies"	2

In geography the selection is narrowed to a fewer number of works, yet here again books written by teachers of the deaf play a prominent part.

CIVICS

26 Schools Reporting

Fryer, "Our Home and Personal Duty"	2
Fryer, "Our Town and Civic Duty"	2
Winston, "Young American Readers"	2
Hill, "Community Life and Civic Problems"	2
Hughes, "Community Civics"	2

PHYSICS

22 Schools Reporting

Culler, "First Book of Physics"	21

The last named is the only book in physics that is used in more than one school; its wide use is probably due to its being recommended for this study by Gallaudet College.

TRADES TEXTS

10 Schools Reporting

Hague, "Textbook of Printing Occupations"	2
Henry, "Printing for School and Shop"	2

MISCELLANEOUS

19 Schools Reporting

Teller and Brown, "Business Methods"	3
Davison, "Health Lessons"	3
Foster, "Story of the Bible"	2
Buffin and Deaver, "Sixty Lessons in Agriculture"	2

METHODS OF INSTRUCTION

The schools included in the survey comprise a fair sampling of organized effort for the education of the deaf in this country, and for that reason the summary of the various methods of instruction employed, as shown in the following classification, is more or less indicative of the general practice. The numbers represent the number of schools employing the respective methods.

***Single Methods*:**	
Combined	9
Oral	2
***Dual Methods*:**	
Oral and manual	3
Oral and combined	2
Oral and manual alphabet	1
Oral and auricular	1
***Three Methods*:**	
Oral, manual and auricular	6
Oral, manual and combined	2
Oral, auricular and combined	1
***Four Methods*:**	
Oral, manual, auricular, and combined	1

In one-fourth of the schools no change in the method of instruction is made during the school life of a pupil. It should also be stated that both of the schools listed in the foregoing paragraph as oral, and one of the "combined" schools, are included in this group.

A majority of the schools that regard method of instruction as flexible state that when occasion demands—that is, when a child fails to make the progress expected of him—he is transferred to another class under a different method of instruction. For a group of 5 schools, the declaration is made explicitly that when a pupil, after ample trial, cannot progress by the oral method he is taught manually, and in 2 schools a change results when pupils advance from the lower to the upper grades. In one other school, both of the last-named reasons bring about a change in method.

Only 3 of the 29 schools studied are required by law to use the method they do, and 2 of them are in the same state.

One oral school and 6 combined schools have since their foundation maintained the same method of instruction. Six other schools complete this group. No information was obtained on this subject from a group of 5 schools.

Eleven schools, in the course of their history, have made changes in the method of instruction. In most of these cases the change or changes have been more in the nature of a gradual transition. Further, in 4 of the 11, the change was begun approximately 35 years previous to the survey (1924-1925). In 2 schools no particular date marked the change, and in the others it began 46, 44, 30, 20, and 13 years, respectively, before the year of the survey.

The reasons for changes in method are interesting, though they all follow a general trend. They show that most of the schools involved sought to fall in with the general march toward oralism, and whether "out

of deference to the wishes of parents," or to establish increased efficiency in language instruction, or to help "remove the barrier between the child and the English-speaking world in which he lives," or from "pressure of progress in other parts of the country," a systematic movement was launched to eliminate signs as a means of instruction in schools for the deaf.

How results in speech and speech-reading are tested in the various schools may be seen from the following summary:

By "tests"	6 schools
By the teachers, with the aid of supervising teacher, principal or superintendent	6 schools
By the teachers themselves, in some cases periodically, in others in the ordinary course of their work	5 schools
By individuals other than the teachers, either other teachers, other pupils, superintendent, or supervising teacher	4 schools
Monthly tests	1 school
Monthly tests by teachers, term tests by principal	1 school
Twice a year, with intelligence tests	1 school
Twice a year, sometimes monthly	1 school
No tests for speech; only occasionally for lip-reading	1 school
No answer	3 schools

A striking fact revealed by the survey was the apparent lack of either a systematic or scientific method of testing the hearing of pupils in schools for the deaf. Of the schools studied, 6 made no answer to a question on this subject. In 14 schools such tests, carried out by the teachers, or by the teachers with the aid of principal or superintendent, employed bell, horn and piano, or the voice for sound, vowel, word and sentence perception. The audiometer served the purpose in 8 schools, and in one other instance the hearing of pupils was tested by a specialist.

Two-thirds of the schools do not prohibit manual spelling. In only one of the schools, where they wish "communication to be by oral means," is it definitely prohibited as a practice. In another school it is "not entirely" taboo, and in still another case it is kept

out of the "sub-primary department." In order "to secure increased practice in speech and lip-reading," manual spelling is not permitted in the oral classes of 6 other schools.

In the beginning oral classes of only a small number of schools—3 of the 29—writing is not taken up until the pupils are taught the spoken word, with the motive of developing dependence upon speech and lip-reading.

Only a few schools, 3 in number, teach signs, although in one of these such instruction is given outside of class. In a fourth school signs are taught only for exhibition recitations, and in another only in religious instruction. In still another instance such teaching is not done systematically.

In only 6 of the 29 schools are chapel exercises conducted without signs. In only one school are no signs used by the children in their play; in another school they are used only "to a limited extent." In 7 schools signs are not used by pupils in plays and dramatics or in their literary entertainments.

The majority of schools—19 of the 29—do not prohibit the use of signs, although in a number of these their use is discouraged. One school expressly forbids their use. A species of modified prohibition is enforced in the remaining group of 9 schools—one school answering "No and Yes" to the question, 5 extending the ban only to the schoolrooms, and 1 only to oral classes, 1 removing signs from all communication between teachers and pupils, and one preventing the use of signs only in the dramatics or literary entertainments of the pupils.

The Muller-Walle method seems to be favored among the schools that have adopted a special method of lip-reading, 13 of the 26 schools that gave answer naming it as the one employed. Nine schools lean to no particular method, 2 follow the Northampton, or Clarke School, methods, 1 has devised its own charts and method, and 1 uses both the Nitchie and Muller-Walle methods.

SCHOOL POLICY

Grading.—In an attempt to throw some light on the process by which children in schools for the deaf are graded, answers to the following questions were sought: By whom is the grading done? How often? Upon what is it based?

In a number of schools these questions were misunderstood as referring to the marking system of classroom work, and as a result their answers are not included in this analysis.

Of the other schools, the information obtained may be summarized as follows: The grading of pupils is attended to by the departmental principals, usually upon consultation with teachers, in 6 schools; in 5 schools it is done by the head of the school with his assistants and the teachers involved; in 2 schools this task is performed by the departmental principal and the supervising teacher; in 2 schools by the head of the school and the departmental head; in 2 schools by the school head; and finally, in 2 other instances it is made a school affair in which all the members of the faculty collaborate.

According to the general rule—in 12 of the 19 schools giving information—grading is a periodic procedure definitely carried out once a year, with further adjustments made when they are deemed necessary. In 3 schools it is done approximately twice a year, and in another school "each semester." Three other schools make it a more or less continuous practice, changes being made when occasion demands.

In the same schools, the grading is based on:

General average	9 schools
English and general average	2 schools
English, mathematics, and general average	2 schools
English and lip-reading	1 school
English	1 school
English and mathematics	1 school
Class examinations	1 school
Speech and lip-reading in primary department; English in advanced department	1 school
Speech and lip-reading in oral department; otherwise general average	1 school

Promotions.—Although there is wide variety as to who decides upon promotion of pupils, the tendency apparently is to place this responsibility upon the department principal and teachers together, such being the practice in 11 of the 28 schools from which information was obtained. In most of the other cases, also, the principal—or if there is no principal, then the supervising teacher—assumes an important share of this duty. Thus, in 3 schools the principal alone decides promotions, in 3 other cases the superintendent and the supervising teacher do so, and in one other school the principal and supervising teacher together decide. The superintendent himself, in 2 schools, does the promoting, in 3 other schools he does so with the help of the teachers, and in one other instance the superintendent, principal and teachers together exercise this power. In 3 schools the teachers recommend promotions, and in one other case the members of the faculty pass on them.

Rotating System.—Most of the schools considered—21 of the 29—employ the rotating plan of class work in one form or another. In practically every case where it is employed only the upper grades are concerned; the sub-primary grades only in one case, and the primary grades for one period of lip-reading in another, are the exceptions to the rule. The pupils in one other school change classes in only one grade, but which one is not indicated.

Transfer from One Method to Another.—The flexibility of school policy as it operates in schools for the deaf is revealed in the following summary:

1. **Are pupils ever transferred from oral to manual classes?**

Yes	20
Occasionally	1
Seldom	1
No	4
No answer	3

Failure to make satisfactory progress under oral instruction is the theme of the reasons given in most cases,

such being the justification in 17 of the schools where it is the policy to make such changes. Other scattered reasons, some of them tending the same way, are the following: Failure to progress in lip-reading; when it is considered to the advantage of the pupil to make such a change; whenever mental development is retarded by the method; to meet the child's needs and not to waste time; on recommendation of the teacher.

2. Are pupils ever transferred from manual to oral classes?

Yes	10
Occasionally	2
Rarely	4
No	7
No answer	6

When a pupil shows prospect of progress by oral training—this seems to be the principal reason for a transfer as indicated in the second question, 7 of the above schools making such a statement. Other reasons—each one representing the policy in a different school—were given as follows: For better grading, or if to the advantage of the pupil; the best interests of the child; the parents request it; it is the policy of the school to give oral training; for any justifiable reason; when a child is too bright for a manual class.

Size of classes.—The policy of the schools studied as regards size of classes is brought out by an analysis of the data obtained. To begin with, the average size of classes is shown in the following statement:

8	pupils to a class in 2 schools
9	pupils to a class in 3 schools
10	pupils to a class in 5 schools
11	pupils to a class in 6 schools
12	pupils to a class in 6 schools
13	pupils to a class in 1 school
14	pupils to a class in 1 school
15	pupils to a class in 1 school
9-15	pupils to a class in 1 school
12-15	pupils to a class in 1 school

From the above, it may be seen that the tendency is not to exceed 12 pupils in the average size of classes. The median of the above averages is 11.

Various reasons determine the size of classes, the leading reason being to serve the purposes of grading, the policy in 8 schools. In 6 schools, the size is determined by the funds available, the number of teachers, and grading so far as it is possible. In 5 other schools it is simply a matter of necessity, that is, dependent upon the number of teachers the funds at hand will provide. A number of other individual reasons are these: Size of enrollment; the number that will produce the best results in instruction; and "survival of the fittest." In 4 schools the policy is to limit to 10, 10 in the lower grades only, 11, and 12 pupils, respectively.

The report on the answers to the question: Are oral classes smaller than manual? yields this information:

No	in	12 schools
Yes	in	8 schools
Both the same	in	2 schools
Sometimes	in	1 school
No answer		6 schools

In the schools where oral classes are smaller, a variety of reasons are given in explanation. Three state that in an oral class more intensive individual teaching is required; in another, the reason is that communication by the manual method is easier, hence classes may be larger; in another, oral classes are smaller because of the problem of grading, and in still another, the manual classes are composed of older pupils and so can be dealt with in larger groups. One school declares flatly that the manual classes are larger out of necessity, as there are not enough teachers for the latter type of pupils.

Methods of Communication.—Only 17 schools offered information on the methods of communication followed and for these schools there seems to be a fairly even distribution. In 4 groups of 3 schools each, the methods of communication are respectively, speech, spelling and signs; speech, spelling and writing; speech and spelling; speech, spelling, writing and signs. In 2 other schools it is speech with oral classes and spelling with manual classes; in one

school speech and writing are resorted to; in another it is speech in the primary department and speech and spelling in the higher departments; and finally in one other school speech alone is used.

Speech is first used with pupils immediately after they enter, in 11 of the schools studied, and in 10 other schools this is done during the first year of school life. In other cases—each representing a single school—speech as a method of communication is employed by the end of the first year; the latter part of the first year; as soon as the elements are learned; in the primary classes; in kindergarten.

Although, as was brought out in the discussion on methods of instruction, writing is not at first prohibited, a further detailed analysis of the information obtained points to more of a tendency to place writing as a part of school work after the first efforts in speech work. Thus, whereas in 11 schools speech is used as soon as the child enters, writing begins at the same time in only 7 schools. In 9 other schools, writing is taken up during the first year, one of these schools stating definitely that it is after speech has been begun. In 3 schools, also, writing comes in after the first few weeks, although in these cases speech work commences when the pupil enters. Further, 5 other schools consider writing after the beginning of speech; in 2 of these it is at the end of 3 months; in one toward the end of the first year; in another after the speech elements are learned; and in the last "after the spoken word." In one school it is taken up in the primary classes, and in another in kindergarten, although no information as to whether it follows speech is given.

From the answers given by 24 schools it would be difficult to determine the general practice as to when manual spelling is first used. The greatest number, 6, state that it is used from the start in manual classes; in 4 others during the first year. In 2 schools manual spelling is used from the beginning of the child's school life, and in a

similar number when it is necessary to maintain satisfactory progress. In one school answering the question—an oral school—it is not used at all, and in another it is not employed by oral teachers. A variety of replies marks the remaining schools: When the pupils picks it up; when the child is first transferred to manual classes; in the 7th year; in the 7th grade; after the child has been from 7 to 10 years in school; no definite time; only as a last resort; in the first year in the main building, but not in the oral building.

The great majority of the schools studied maintain contact with other schools by means of athletic contests or visits by teachers, these sometimes being made social occasions. A few schools make it a definite part of their policy to grant members of their teaching staffs at least one day to visit other schools.

Session Plan.—In a majority of the schools giving information, 14 out of 24, there is a clear-cut plan of distributing the work, namely, a definite session separation between academic and industrial work. In these 14 schools also, the academic program occupies either all or a major part of the morning on week days, the trades work following sometime in the afternoon, after the midday meal. Another session plan is in effect in a group of 9 other schools, where the academic and the trades departments are active side by side, mornings and afternoons of week days, different classes of pupils alternating in each. However, in 4 of the 9 schools in the latter group, primary children are given a straight session of school work, with no industrial work. In most of the schools referred to in this paragraph, Saturday morning is given over to trades teaching.

The plan in vogue in the remaining school, one of the prominent schools in the country, for which information was available is unique. In the first place the daily program for pupils of the primary department follows the plan of separation—academic in the morning and indus-

trial (for the older primary children only) in the afternoon. Intermediate pupils do most of their school work in the morning, then continue school work on the afternoons of double session days 2 times a week, and on the 3 other afternoons of single session days have shopwork. Pupils in the advanced department have no school at all on Monday, but devote that day entirely, from 7:30 a. m. to 12, and from 1 to 2:45 p. m. to shopwork. On 2 double session days shopwork is scheduled for the forenoon and school for the afternoon, and on 3 single session days this order is reversed. Under this plan Saturday is utilized as a regular school day for both class and shopwork in the advanced department. It is the size of the school, probably, that dictates so complex a system.

The following tabular arrangement, based on the information obtained from the questionnaires or school yearbooks, shows the portion of the week day devoted to school work, as distinct from shopwork, time for recess deducted. For a number of schools it was not possible to determine the time given separately to academic or industrial work, and so they are not included in this summary.

3½ hours	1 school*
4¼ hours	2 schools
4½ hours	6 schools**
4¾ hours	8 schools***
5 hours	1 school****

*Junior department, 2¼ hours.

**In one of these schools only the primary department is here included.

***In one of these schools only the primary department is here included; in another the primary department school session, morning, and afternoon, totals 6 hours; in another of this group of schools the primary department school program is 4 hours and the intermediate department 3¾ hours.

****Primary department, 4¼ hours.

Of the schools giving information on the subject—a total of 22—only a third, or 7, do not have industrial classes for pupils of the primary department.

The extent of industrial work in the school program, including work on Saturday morning, in the schools where it

was possible to analyze the data reported, is indicated in this summary:

2 schools	12	hours per week
1 school	13	hours per week
1 school	14½	hours per week
1 school	15	hours per week
1 school	15¾	hours per week
1 school	16½	hours per week
1 school	18	hours per week
1 school (advanced department)	20½	hours per week
1 school 10 hours per week, plus Saturday morning.		

A similar arrangement follows for those schools that give no information with regard to Saturday morning work.

1 school, junior department	5	hours per week
1 school, intermediate department	6	hours per week
1 school, senior girls	10	hours per week
2 schools,	10	hours per week
1 school	12½	hours per week
1 school, primary department	12½	hours per week
1 school, senior boys	13 1-3	hours per week

Length of School Day.—Excluding the Saturday morning program, the actual length of the daily school work, consisting of both academic and industrial classes, may be determined from the following distribution of schools for which a total time allotment could be added up.

6 hours daily	3 schools
6¼ hours daily	1 school
6½ hours daily	2 schools
6¾ hours daily	5 schools
7 hours daily	3 schools
7¼ hours daily	2 schools
7½ hours daily	1 school

As in a number of cases a distinction is made for primary pupils, it is necessary to give another distribution, as follows, for such children. It should be noted that but for 2 of the 8 cases the program in each instance is perceptibly shorter than any of those for the older children as shown in the preceding table.

3¼ hours daily	1 school
4 hours daily	1 school
4¼ hours daily	1 school
4½ hours daily	1 school
4¾ hours daily	2 schools
6 hours daily	1 school
7½ hours daily	1 school

One hour of required study outside seems to be the most prominent method of having pupils prepare for classroom work, 11 of the 29 schools agreeing on this. Three other schools assign 1½ hours for outside study. For the remainder there is a scattering of study schedules, no two of which are alike. In only a single instance is there no required study at all outside of school hours.

In every case but one, the outside study is assigned under supervision. In a few instances, however, the supervision is only partial. Thus, in 3 schools the study of the pupils of the upper classes is not supervised, in a like number of schools supervision is provided for only part of the study period, and, finally, in one case the "honor study rooms" are not supervised.

Reading, as part of the work outside the classroom, receives varying degrees of recognition. In 8 schools no specified number of hours of such supplementary work is named; in 6 schools none is required at all. Three schools include reading with the general study-hour work, and for another group of 3 schools one hour a week is definitely set aside as a reading period. In the 5 remaining schools giving information, the respective reading periods vary from three-fourths of an hour to 2½ hours.

Approximately half of the schools considered have pupils report on the reading done outside class, although in a few cases this is carried out only "to some extent."

Practically a third of the schools, 9, make no endeavor to put pupils back into schools for the hearing. Of the other 20 schools, in only 8 cases did the number of children returned in the 5 years preceding the survey reach 5 or more—the highest, 15—the proportion of such children to the total enrollment being in most cases either below 1 per cent or else negligible. Further, the answers show that of the children sent back to the public schools most of them possessed a high degree of normal hearing.

For only a small number of the schools is data available as to the success of pupils who were returned to

schools for the hearing, and in these cases there is little agreement. Two schools report them as failures, 2 as making good progress, 3 as doing fair work, and 4 other schools report varying success.

Preparation for Higher Work.—It is the policy of only a very few schools to prepare pupils to enter high schools for hearing children, 6 of the 29 schools undertaking such work. One of these maintains a regular high school department itself in which the pupils take the same state high school examinations that they would in schools for the hearing. The extent of this work in the other 5 schools, however, does not indicate an imposing record, for only 9 pupils in the 5 years before the time of the survey comprise the total, although all have been successful in their advanced work.

Only 2 schools declare definitely that they prepare pupils for colleges for the hearing, having sent up a total of 11 students in the 5-year period previous to the survey, 4 of whom completed the higher course.

The great majority of schools studied, 25 out of 28, prepare candidates for admission to Gallaudet College, the national institution for the higher education of the deaf. In the 5 years preceding the survey these schools prepared 265 of their pupils for this purpose, 145 of whom entered. During the same period 39 of their candidates were graduated from the college.

Government of Pupils.—In the matter of government of pupils, 6 distinct plans seem to prevail in the schools examined. These, summarized, are as follows:

1. Entirely in the discretion of the governing head, all rules and regulations being made directly by him. This is the practice in 9 schools.

2. Teachers and officers assist the superintendent or principal in the management of pupils, a method followed in 11 schools.

3. Pupil organizations and clubs share with the execu-

tive and faculty the responsibility of school government. This system obtains in 3 schools.

4. Two schools, in addition to the distribution of managing authority referred to in the last-named group of 3 schools, also employ the military system as an aid in the government of pupils.

5. One school depends upon a system of rule by the superintendent, teachers and officers and military organization.

6. In 3 schools pupil government is attended to by the officers and members of the faculty as distinct from the executive office.

SCHOOL LIBRARIES

The following classification is fairly indicative of the size of libraries in the schools visited during the survey:

Between	1,000 and 2,000 bound volumes	7 schools
Between	2,001 and 3,000 bound volumes	4 schools
Between	3,001 and 4,000 bound volumes	3 schools
Between	4,001 and 5,000 bound volumes	4 schools
Between	5,001 and 6,000 bound volumes	2 schools
Between	6,001 and 7,000 bound volumes	2 schools
	8,000 bound volumes	1 school
	9,709 bound volumes	1 school
	11,319 bound volumes	1 school
	16,000 bound volumes	1 school
No library		1 school
No answer		2 schools

Calculation of the data from which the foregoing table was constructed gives a total of 121,838 volumes for 26 schools, or an average of 4,686 to a library. The median places it between 3,001 and 4,000 volumes.

In a number of the above schools—7—the choice of books to be added to the school library generally lies with the teachers, acting either individually or as a committee chosen from among them. In 6 others the teachers aid the head of the school in deciding upon new books, and in one other the supervising teacher and the teachers coöperate. In 6 schools the librarian joins with the teachers, the supervising officers or the head of the school in selecting additions. In one school the superintendent

alone chooses the books, in another the officers, and in a third it is the academic principal, who is a trained librarian. In one other school the teacher of reading performs this duty, and, finally, in one case library additions are selected by the state library commission.

The general tendency seems to be to employ a librarian for only part-time care of the library, a condition which prevails in 14 of the 27 schools giving answer. In addition, 2 other schools assign a teacher who gives part-time special attention to the library; in another, it is the supervising teacher, and in a fourth case a lady in the office gives part of her time to this. Two schools employ a librarian who gives full time to the library work. In 7 schools no one person is regularly employed for the library, either on part or full time.

The schools seem about equally divided on the question of giving regular instruction in the use of the library. Fourteen schools do give such instruction, and 13 do not.

Library hours are in effect all of the school day in 9 of the schools, although in 2 of these for the teachers only, and in another for the men students and members of the faculty only. Five schools permit the use of the library for approximately 1 hour each school day, in one case this being the aggregate time allotted the women students. In 4 schools library time is only about half an hour daily. For the others, the practice varies considerably, from one hour a week to 24 hours a week. In 2 schools, books are drawn once a week; in one of these this privilege is extended if necessary, in the other the library is too small to permit reading in it.

The course in 24 of the 29 schools prescribes regular reading as part of the school program. Although it would be difficult from the answers to determine exactly that the lower end of a division in one school did not overlap with the upper end of another department in a second school, the following classification indicating the grades in which regular reading is required may be accepted as fairly correct:

All grades (from sub-primary up)	4 schools
Intermediate and advanced departments	12 schools
Advanced grades only	7 schools
Not sharply defined	1 school

The trend seems clearly to favor including the intermediate grades.

The library department of most of the schools studied —21 of the 29—maintains no connection with city or state libraries. Of the others, 3 intimate that there is no real connection, as they state that the municipal libraries merely are available to pupils who occasionally draw books. One other school declares that "books are seldom borrowed." This reduces the number of schools that enter into active coöperation with other libraries to 4.

Additions to the school libraries during the year preceding the survey were made as follows:

1—100 volumes	10 schools
101—200 volumes	5 schools
201—300 volumes	2 schools
301—400 volumes	2 schools
401—500 volumes	3 schools
501—600 volumes	1 school
To the amount of $500 every 4 years	1 school
No record	1 school
No answer	4 schools

The sums expended yearly for librarian service, whether for full or part time, vary from $100 in the lowest, where that amount is added to a teacher's salary for special attention to the school library, to $720 for part-time care. Only 2 full-time salaries are indicated; in one case it is $400 (presumably with maintenance) and $200 for an assistant; in another it is $495. The information obtained on librarian salaries is here summarized:

$100 (part time)	2 schools
135 (part time)	1 school
200 (part time)	2 schools
250 (part time)	2 schools
315 (part time)	1 school
495 (full time)	1 school
600 (1 full time; 1 part time)	2 schools
720 (part time)	1 school
No fixed amount	1 school
Nothing	5 schools
No answer	11 schools

A similar summary reveals the extent of the sums spent yearly for additional books for school libraries, the amounts varying from $75 as the lowest to $850 as the highest.

Less than $100	2 schools
Less than 200	2 schools
Less than 300	4 schools
$300	2 schools
500	3 schools
850	1 school
No specified yearly amount	10 schools
$276 in year preceding survey	1 school
Fund varies from 100 to $200	1 school
Fund varies from 200 to 300	1 school
Fund varies from 200 to 500	1 school
No answer	5 schools

Most of the schools giving information employ a definite system of cataloging library books, whether it be the standard methods of the American Library Association, or simply a card index. In a very few schools the books are merely arranged in cases according to the nature of the texts and labeled, or, as is done in one instance, are listed in an index book in which a record of withdrawals is kept.

EXTRA SCHOOLROOM ACTIVITIES

Children in schools for the deaf apparently have the same play tendencies that move hearing children, the games that they play being of the same nature. This is testified to by almost every school making a report. Regular instruction in games and sports is given in practically all of the same schools as a part of physical training and as a means of stimulating the recreational spirit. Further, in a majority of the schools studied, toys are provided for the younger children.

Of 24 schools, half set aside between 1 and 2 hours daily for regular sports and recreation; in the other half 2 hours or more are assigned for this purpose. Most of the schools state that additional play hours are granted on Saturday and Sunday.

Most of the 29 schools furnish playground equipment

and apparatus. Four of them do so only to a limited extent, and in one school a playground equipment fund is being raised by private subscription. Judging from the replies, the apparatus, named in the order of most frequent appearance, seems to consist of swings, slides, seesaws, giant strides, merry-go-rounds, bars, rings, "ocean waves," ladders, and the trapeze.

With the exception of 2 schools, all have literary societies, the meetings of which, in most cases, are conducted under the direction of principal, teachers or supervisors.

In only a few of the schools studied—7 in number—do pupils edit or help edit the school paper. However, in practically all the other cases, pupils contribute "copy" in some form—schoolroom stories, journals, exercises, and papers—all this serving as an outlet for classroom work.

Efforts to cultivate expression, as well as to afford amusement, are carried on as extra-classroom activities in the form of dramatic entertainments in all but one of the 29 schools studied, although in a very few of these cases such efforts are more or less sporadic. The practice of having the children give social entertainments is equally prevalent, in recognition, probably, of the broader duty which a school for the deaf must assume in the development of the life of its pupils, in rounding out the social personality.

In all but 9 of the 29 schools there are regular religious organizations, the pupils, aided by teachers, conducting the meetings. By far the most popular of these pupil organizations are the Christian Endeavor Societies, in both junior and senior branches. Others represented are the Y. M. C. A. and the Y. W. C. A., sodalities, Sunday school, church and mission societies, and prayer meetings.

Most of the schools studied, 24 of the 29, recognizing the value of visual instruction, have acquired motion picture machines, in one case there being several machines, and in another two. One school rents the use of a machine.

In the majority of instances, also, the pictures are not used for pleasure alone, the instructional feature being given due stress. The latter object is attained in various ways: 1. the selection of educational films; 2. to illustrate lectures; 3. classroom exercises on films shown; 4. newsreels, and 5. special films to illustrate lessons in geography, history and hygiene. In the auditorium of one school one machine is used for weekly entertainments, using selected films; a second and portable machine and screen permit duplicating for the children of the primary hall the entertainment given in the main building. The portable apparatus also serves in the schoolrooms for reviewing educational films and for special projection.

Other apparatus used for entertainment or instruction in a number of the schools includes the following: Stereopticon, Keystone visual educational machine, daylight screen, reflectoscope, Balopticon, special projector's table on wheels, portable machine, and various outfits of slides.

It is the practice in most of the schools, according to the replies received, to invite visitors occasionally, or prominent men and women of the community, to address the pupils. Often talks are given by ministers of city churches, and occasionally, also, sermons by visiting missionaries to the deaf. Sometimes competent persons are invited to give the children special lectures on safety and hygiene, or travel talks, and sometimes, also, special speakers are obtained for literary society meetings. The general rule, where these talks are given orally, is to have them interpreted manually for the pupils.

In each of the 29 schools the pupils have athletic contests with outside teams. Arrangements for such contests are most frequently made by the athletic director, this being the practice in 12 schools. In a number of other schools, 8, the same officer shares this responsibility with either the head of the school, other members of the school staff, or representatives of the pupils. In only a few cases, 3, do the pupils or students themselves undertake the ar-

rangements. In a few schools it is the head of the school; in one case it is a graduate manager, and in another the head supervisor of boys.

The summary given below indicates the extent to which the time outside schoolroom hours is turned to educational advantage for the pupils. The 29 residential schools are considered.

Pupils Visit	Number of Schools		
	Yes	No	No answer
Points of historical interest	19	4	6
Industrial plants	22	5	2
*Farms	11	8	10
Markets	14	6	9
Stores	23	2	4

*In many of the schools studied, a great number of the pupils themselves come from farming districts.

CUSTODIAL CARE

The span of the complete active day in a residential school for the deaf is indicated in the following summary, compiled from the information obtained:

14½ hours	2 schools
15 hours	6 schools
15½ hours	8 schools
15¾ hours	1 school
16 hours	1 school

For the younger children the hours are materially shorter.

The most popular hour for rising is 6 a. m., and the time for retiring in one group of schools is 9 p. m., and in another equally numerous group it is 9:30.

In every case where answer is given—in 27 of the 29 schools—it is the custom for the younger children to be constantly in the care of an employee.

There seems to be no uniformly adopted plan with regard to the privilege of leaving the institution grounds alone. The plans in practice are these:

1. Older boys may leave either freely or at stated times; girls must be chaperoned ..... 5 schools
2. Special permission from school authorities necessary ..... 4 schools
3. Older pupils may go alone, either at stated times or freely ..... 4 schools

4. Older boys by permission, girls chaperoned ..... 3 schools
5. Older boys either freely or at stated times, girls in groups ..... 3 schools
6. Older boys at stated times ..... 3 schools
7. Older boys freely ..... 3 schools
8. No privileges ..... 2 schools
9. Written permission from parents ..... 1 school

Neither does there seem to be a uniform system with regard to the administering of discipline. Owing to the many-sided nature of a residential school for the deaf there must necessarily be a distribution of authority over many different departments, all naturally centering in the head of the school. This factor, considered with the size of the school population, makes for delegation of authority in minor matters, since many of the offenses of school children are minor infractions. For this reason the general rule is to place responsibility in the hands of the person, whether teacher, supervisor, house mother or matron, who is in immediate charge. Serious cases are referred to the head of the school.

It is clearly the tendency for schools to assign as supervisors persons who do not receive regular training in the duties of that position. Twenty-two of the 26 schools giving answer make statement to that effect. In half of the same total number of schools also, supervisors hold meetings for the consideration of the problems of their work.

Where parents have the means, they supply the clothing of the children in schools for the deaf. In the case of indigent pupils, however, in many of the schools, the necessary clothing is provided by one of three means: 1. by the school (in 6 cases); 2. by the state (in 3 cases); 3. by the counties concerned (in 12 cases). In 7 other schools, it is incumbent upon the parents to furnish clothing for the children.

RELATIONS WITH HOME

Only four of the 29 residential schools arrange for parent-teacher meetings, and in one of these only the

smaller children are concerned. Such meetings, in two of the four schools, are held about twice a year; in the other two there is neither definite number nor time of meetings.

The most common method of acquainting parents or guardians with the progress made in school by pupils is by monthly report, such being the plan employed in 15 of the 26 schools giving information. For the remaining 11 schools the practice varies considerably, from no formal report at all, to one report a year.

Most of the schools also, 24 of the 29, permit children to go home for long holidays, although in seven of them these holidays include only those of the Christmas season.

Only two of the schools declare that none of their pupils go home for week ends. In a great many of the others, 18, this privilege is extended to those children who live either in the city where the school is located or within convenient distance. In five schools, week-end visits home are made occasionally or only by a few pupils. In one school only the older pupils enjoy this privilege, and in three others such home visits are permitted, but not so often as once a week.

The general tendency is to place no restrictions on visits to the school by parents, the latter being permitted to visit as often as they wish. In fact, the general spirit of the schools answering is to encourage parents to become acquainted with the work done. In three schools the rule is to permit weekly visits by parents, and in another only once a month. In all the others it seems to be a carte-blanche privilege.

Most of the schools, 25 of the 29, assert that pupils are encouraged to speak when at home. However, for a few schools, where most of the parents are foreigners, English is not spoken at home, and so there is little opportunity to exercise what is taught at school.

Only a sixth of the schools, five of the 29, employ an individual who, as part of his or her duties, maintains contact with the homes of the children. The nature of this

service may be surmised from a brief statement as given for each of the five schools.

1. Talks with parents about conduct and welfare of the children, and studies home conditions.
2. Acquaints parents with activities of the school.
3. Investigates conditions; gives needed help and advice.
4. Brings about a closer contact with school.
5. Discovers new pupils and brings them to school.

In five schools, it is the custom to have the children write home weekly, in twice that number every two weeks, and in seven schools once a month. In the seven remaining schools, the periods vary: three require weekly letters of some pupils and bi-weekly of others; one weekly for younger children and monthly for older ones; two set no regular time; and in one it is about once in six weeks, the school being situated in a large city from which practically all of its pupils are recruited and where they frequently see their parents. It is a general rule, also, to encourage pupils to write home regularly as a habit, regardless of what the minimum school requirement may be.

The practice appears to be to have the required school letters which are written in class corrected before they are sent out, 21 schools answering "Yes" to such a question. Of the other 8 schools, 6 have the letters of the middle and lower classes corrected, and 2 do not correct any.

In practically half of the schools—14—letters of the children, whether regular school letters or otherwise, are not censored. Of the others, for 6 schools there is a straightforward affirmative answer to this question, and for 9 schools letters of the pupils are censored only in unusual cases; for instance when the information conveyed may cause undue alarm, when fact and accuracy are involved, or when unreasonable requests are made.

SCHOOL RECORDS

Vital statistics as to pupils, in practically all of the schools studied, are obtained from the information given

in an application or questionnaire filled out on entrance. Such information is as a rule furnished by parents or guardians, and in a number of schools is supplemented by examinations by the school medical staff.

A careful study of the questions asked of parent or guardian on the latter's application for admission of a child to a school for the deaf shows a wide range of data sought. In some cases the number of questions are few, in others extended and elaborate. A typical application blank might call for information on such matters as:

(a) Personal facts concerning the child: name, sex, date and place of birth;
(b) Deafness: cause, at what age, degree, auditory perception remaining;
(c) Speech and lip-reading ability, or other means of communication;
(d) Habits: personal, play;
(e) Moral disposition;
(f) Mentality;
(g) General state of health: eyes, teeth, etc.;
(h) Chronic infirmities or ailments;
(i) Previous sickness: measles, scarlet fever, whooping cough, etc.;
(j) Previous schooling;
(k) Parents: nativity, occupation, consanguinity, deafness, deaf relatives, family history, citizenship, church, pecuniary circumstances.

In a number of schools the authorities fortify themselves against the caprice of parents by requiring a signed statement from them on the application blank to the effect that they will take the child from the school when requested to do so by the proper official there, and also that the child must not be removed during the school period unless with the express consent of the head of the school.

Some schools also require a certificate, to accompany the application, as to the physical condition of the child and attested to by a physician, such statement to cover a thorough examination.

Most of the schools studied—19 of the 29—have systematized a permanent individual card file record of the

personal and school history of their pupils, the cards in some instances carrying general information regarding an individual's career subsequent to, as well as during, his school life.

From the samples obtained it is difficult to determine whether it is the general practice to keep a health record. If records of physical examinations, hospital reports, periodic weight and height taking, eye, ear, nose and throat examinatons, dental records, periodic reports of the school medical staff and inspection of health habits, etc., can be classed in general as health records, then the tendency is clearly established, for 21 of the 29 schools employ one type or another of such records.

All the other records kept, which were reported under the topic of school records, may be included in a miscellaneous collection too varied to classify. Among them are the records of the work of the different school departments, a discipline record, statistical maintenance reports, admission and discharge record, personal diagnosis record, attendance records, honor roll records, class reports, and record of visitors to pupils.

A few specific facts derived from the statements made by the schools relative to these records disclose a number of interesting conditions. Thus, in an attempt to determine what the average length of school life is, the following distribution was obtained:

5.8	years	1 school
6	years	2 schools
7.5	years	1 school
8	years	1 school
8.5	years	1 school
8.8	years	1 school
9	years	1 school
8-10	years	1 school
10	years	2 schools
10.5	years	1 school
10-12	years	2 schools
12	years	2 schools

The range, according to the 16 schools listed above, extends from 5.8 years to 12 years, with no marked em-

phasis anywhere along the line. However, if a group classification were made, it would be found that for 7 of the 16 schools the average length of training obtained would be from 8 to 10 years, inclusive. Also, at Gallaudet College, where the entire course covers 5 years, the average length of enrollment is between 2 and 3 years.

The causes operating to induce pupils to leave school before completing the course may be listed as follows, in the order in which they occur—the numbers indicating the schools naming the respective reasons—27 schools reporting:

Desire to earn money; to go to work	22
Inability to continue with the school work	16
Help needed at home	13
Poor health	5
Indifference	4
Moving to another state or district	3
Lack of money	2
Marriage	2
Whim of pupil or parent	1

The following distribution shows the proportion of pupilage leaving before graduation in those schools that have more or less definitely determined the percentage:

62	per cent	1 school
65	per cent	1 school
73	per cent	1 school
76.7	per cent	1 school
78	per cent	1 school
79	per cent	1 school
80	per cent	5 schools
85	per cent	1 school
88.7	per cent	1 school
90	per cent	2 schools
97	per cent	1 school
97-98	per cent	1 school
Percentage large		1 school

Of the 18 schools reporting, it may be seen that for 9 of them the percentage leaving before completion of the course lies between 80 and 90, inclusive.

Only 5 of the 29 schools keep records of after-school

life, although in 8 others such records of a kind are kept, varying in their degree of completeness.

OCCUPATIONS OF GRADUATES

In the report made by 22 schools, printing was named in every case as one of the trades taken up by graduates. Other occupations followed after pupils leave school are given here in the order in which they were named.

Carpentry	18	Cabinetmaking	3
Farming	15	Factory work	3
Shoe repairing	13	Millwork	3
Dressmaking	10	Art work	2
Tailoring	6	Bricklaying	2
Painting	5	Common labor	2
Auto repairing	4	Housework	2
Baking	4	Millinery	2
Barbering	4	Photography	2
Office work	4	Weaving	2
Teaching	4		

The following occupations, also, each received mention once:

Accounting, architecture, bacteriology, banking, chemistry, cigarette making, civil service, embroidery, furniture making, general repairing, insurance, jewelry, lens making, lithographing, machine work, manufacturing, metal work, ministry, pattern making, photo engraving, plastering, plumbing, publishing, real estate, shirt and collar making, sign writing, surveying, trucking, vulcanizing.

Of the 7 schools that did not list the callings taken up by their graduates, 4 state that their former pupils generally pursue some one of the industries learned at school; the other 3, each a large school, declare that their graduates are to be found in vocations too numerous and diversified to mention by name.

In answer to the question, "Do graduates usually enter the trades taught in the school?" 9 schools stated "Yes," and 5 replied "No." For 6 schools, where other conditions must be considered, a qualified affirmative was given. The explanation in these cases is that where possible graduates do take up the work they started at school, but when they are badly in need of employ-

ment and can not find an opportunity to practise the trade learned they are likely to accept the first thing offered. Thus a permanent change of occupation is often brought about, through no fault of the school, the trade, or the graduate—simply a condition.

Only 12 of the 29 schools venture a statement as to the percentage of their graduates who enter the trades taught at school, and some of these admit that the figures given are only approximate. In a few of them, also, the percentage refers only to special trades such as printing, or carpentry or farming. Summarized, the respective proportions are:

8 per cent	1 school
28 per cent	1 school
50 per cent	5 schools
60 per cent	3 schools
75 per cent	1 school
90 per cent	1 school

Another table, giving the percentage of those still occupied, at the time of the survey, in trades learned at school, carries the study one step further.

5 per cent	1 school
28 per cent	1 school
40 per cent	1 school
46 per cent	1 school
50 per cent	4 schools
60 per cent	1 school
75 per cent	1 school
90 per cent	1 school

Many of the 17 schools not included in the two summaries just presented answered with a question mark or with a statement that they had no record or data at hand on the subject. It is to be regretted that only such fragmentary information is available on so important a matter.

Elaborating upon a subject already partly discussed, it is found that a number of major reasons are given for the selection of certain trades as part of the school curriculum. The first of these, with 27 schools reporting, seems to be that the trades chosen are those best

adapted to the ability or capacity of the deaf to master them. However, in two cases at least, the confession is made that sometimes a trade chosen because it is adapted to the deaf may have become obsolete for that locality at least.

Next in importance is the desire in a number of schools to meet the demands of environment, that is, the conditions in the state or near the homes of the pupils. Thus, one school is located in a large lumber region, hence it concentrates on cabinet-making and woodworking. Another potent influence determining choice of trades to be taught is that they must afford a sure means of making a living, that is, profitable employment. The educational value of certain trades is another factor in making a selection. In addition, there are a number of miscellaneous reasons—i. e., certain trades have been found to be the ones most generally followed by the pupils after they leave school or those chosen furnish a means of taking care of the incidental work of the school, thus fulfilling the purpose of economy and education at the same time; or because they are "best suited for the purpose"; or because "they are desirable"; or "most useful"; or give "the most successful results."

In practically half of the schools studied—14 of the 29—there is no system by which graduates are helped to obtain positions. The nearest approach to a method is the practice in 10 schools of furnishing letters of recommendation. It should be said that probably the same procedure is followed in most of the schools included in the former group. In 2 schools a field worker makes special efforts to place graduates at desirable work, and in one of them the principal of the industrial department also lends assistance. In one school the head teacher advises graduates as to the suitable employment, and in another it is a "trained worker" who helps. One school also keeps in touch with various employment agencies, both state and city.

Only about half of the schools make any report as to the earning power of their graduates. The weekly wages earned by the graduates of those schools giving such an estimate may be summarized as follows:

Minimum		Maximum	
$10	4 schools	$35	1 school
12	1 school	40	2 schools
15	1 school	45	2 schools
18	2 schools	50	3 schools
20	2 schools	54	1 school
25	1 school	70	1 school
		75	1 school

One school reports the yearly earning power of its graduates as between $480 and $2,300. It is significant, further, that the graduates of Gallaudet College are reported as earning from $1,000 as a minimum, to $5,000 as a maximum.

It may be of interest to give here the opinion of one school head on this matter, as probably reflecting the view of others who can not give specific data on this subject.

> It would be only the wildest guesswork to attempt to answer these questions respecting wages. Some of our graduates we know are making high wages and admit it; others are not doing so well and prefer not to discuss it. From such information as I have been able to secure, I am inclined to think the adult deaf of this state as a whole, are doing very well financially.

PUBLICITY

But for one exception, all the schools in the survey publish a school paper as one means of making the purposes and the work known to outsiders. In the conduct of this publication the superintendent or head of the school, in 11 cases, assumes the responsibility for whatever matter is published; in 6 other instances the head of the school shares this responsibility with the editor of the paper, with the academic principal, or with teachers. In 7 schools an editor, a person other than the superintendent, is in charge; in 1 school it is

the academic principal, and in 3 others an editorial staff as a whole assumes the care of the school journal.

In 6 cases, the superintendent or head of the school is himself the active editor of the school publication; in 3 schools the superintendent and the principal do the work; in one case the superintendent and the printing instructor, and in another the superintendent and a teacher. In 10 schools a member of the teaching staff is active editor; in another it is the principal of the academic, and in still another the principal of the industrial, department. In 2 cases also, the head of the printing department is the editor-in-chief. The school steward, with the help of teachers, manages the paper in one case, in another a retired former teacher, and in one other a member of the student body.

In about half the schools giving data—13 out of 27—the school paper is sent to the homes of all the pupils; in 5 others to almost all of them, and in the remainder, 9, only to those persons who subscribe for it. In most of the schools, too—19 of the 27—the paper goes to libraries or state and city bureaus, and in 3 others this practice is followed to some extent.

Only 4 of the 29 schools employ a social worker who, in addition to other duties, also makes publicity a part of his or her activities. In one of the 4 schools, however, it is a teacher who devotes part of her time to the outside work.

In general the duties of this officer in the line of publicity call for visits to different parts of the state to find new pupils, meetings with school officials and social workers, attendance at social service conferences, keeping in touch with former pupils and rendering whatever assistance he can, and whenever possible advertising the benefits of the school and the work it does.

The compensation of the social worker—taking the 4 schools in turn—is in one case $1,450 a year, and in another $1,800. For the third, the individual assigned

to do the work is in the employ of the state board of education at a salary of $1,500. In the last case, where a teacher assumes this duty, it is part of the work for which she is employed, but during the summer vacation whenever her services are required she is paid $4.00 a day and expenses.

As another phase of the campaign to acquaint the public regarding the work done, most schools take part in exhibitions or fairs, even though some of them do so only occasionally. Nineteen of the 29 schools—4 of them only occasionally—join in community projects such as Red Cross and Near East drives, pageants, drills, parades, or carnivals.

Various plans are included in a number of other desirable publicity projects practised by schools for the deaf. The chief of these, perhaps, is the custom of giving demonstrations of school work before societies and civic organizations, and on public occasions. The newspapers, with feature articles and periodic reports, are also relied upon for a certain amount of mention. A number of schools have prepared booklets and pictures, or circular letters, which are mailed to all who are interested or who make inquiry. This informational matter often reaches postmasters, ministers, superintendents of the poor, child welfare agencies, and members of state medical associations. The activities of athletic teams also help attract attention to the schools, as do the holding of special pageants. Information regarding schools for the deaf is in some states conveyed to other educators by means of affiliation with educational and state teachers' associations, and by advertisements in state educational journals. Posters mailed to small post offices, and to high schools and schools in small towns for display on bulletin boards, a slide film for use at exhibitions and fairs, addresses before civic and women's clubs by the head of a school or the members of the staff, contact with various charity organizations,

the state department of education and a federation of philanthropic societies, invitations to visit the school extended to other school officials, to college classes in education, economics and sociology, and to all interested in social service, and finally special demonstrations for the benefit of members of the state legislature—all are methods employed in making known to the public at large what is going on in schools for the deaf.

ADDENDA

At the close of the questionnaire submitted to heads of schools, the latter were invited to call atention to any distinctive features—physical or educational—of their respective institutions not otherwise brought out by the questions asked. Only 9 of the 29 made mention of additional or special features. Some of these are referred to briefly, others are noted more at length. Epitomized, they are in turn, as follows:

1. Military training, and a band.
2. An exceptionally well organized physical training department.
3. Maintenance of a boarding home for deaf working girls.
4. An unusual personal interest in the school by the members of the board of trustees. A special fund from which an annual income of $1,100 is derived, the latter being distributed in cash prizes to pupils as rewards for excellence in scholarship or demeanor or both.
5. A marked English language atmosphere. An efficient department of physical education. Separation of primary from older pupils. Church work outside.
6. An effective English language method through speech, spelling or writing, and the complete absence of signs in any connection of the school. Auricular training another prominent feature.
7. A special study plan made necessary by the lack of large study halls, each teacher taking his class to

his own schoolroom for study hour each evening. Chapel service twice daily for all children. A special method of discipline by which the good child is rewarded with extra privileges.

8. Special courses of instruction in sex hygiene (already referred to in an earlier part of this chapter, page 58, and in home nursing and care of the sick for older girls. An intensely practical and thorough course in domestic science. Introduction of a systematic course in handwork as a partial substitute for literary work for backward pupils. A progressive professional spirit manifested by members of the corps of instruction, 65 per cent of whom were pursuing systematic courses of instruction at neighboring colleges or universities. Eligibility of teachers to scholarships given by an educational foundation which make possible summer courses at the leading universities in the country.

9. Beauty of school site and environment. Excellent grounds for outdoor play and sports. Serviceable school garden and dairy. Practical courses for boys in agriculture, dairying, and poultry husbandry. A good course in baking. Use of rhythm work. Excellence of speech in primary grades, surpassing that of most of the advanced grades. A real oral atmosphere. Attention given to manual classes—size, quality of instruction, supervision, etc. Liberal use of supplementary readers. Use of standardized tests as aids to the teachers in improving quality of class work. Special library of up-to-date educational books and magazines for use of teachers. Budget system of accounting. Fire prevention and protection system. Carryall auto truck for athletic teams, picnics and excursions.

CHAPTER VI

PHYSICAL FEATURES OF PUBLIC RESIDENTIAL SCHOOLS FOR THE DEAF

The present chapter is an epitome of data, collected during the survey, based upon the personal observations of the representatives of the National Research Council who visited the schools concerned. This part of the study relates almost entirely to the physical features of the respective schools. Here, also, only the residential schools are considered, a similar study of the day-schools included in the survey being reserved for another section of the report.

LOCATION OF SCHOOLS

The prevailing location—for the schools studied—is a city or near-city site. Only 8 of the 29 residential schools in question have a distinctly rural location. With but few exceptions, the respective locations are at least fairly accessible by rail and easily reached by trolley, bus or subway lines. In all cases, also, the locations are satisfactorily adapted for school purposes.

Among the geographical advantages found in the school locations, aside from that of accessibility, are a central position with respect to distribution of population, healthfulness of climate, and proximity to the homes of pupils. In fortunately only a very few instances is the school at a remote distance from the center of population.

A change in location is suggested for only 8 schools, approximately a third of those studied. The considerations that would make a change in these cases desirable are as follows:

1. A more central geographical situation, so that pupils would not have such great distances to travel to and from their homes. ..... 4 schools.
2. Larger grounds for recreational purposes ..... 2 schools.
3. Existing transportation facilities very poor. With new roads now under construction this fault will probably be somewhat corrected ..... 1 school.

4. A place in or near the state capital would possibly create a greater interest in the work of the school on the part of state lawmakers and officials.....1 school.

SCHOOL PLANT

Grounds.—The extent of school grounds in the 29 institutions studied varies considerably—from three-quarters of an acre in the smallest to 840 acres in the largest. The distribution in regard to this is as follows:

Number of Acres in the Respective Schools	Character of Location	Geographical Region
¾	Urban	East
About 7½	Urban	East
10	Urban	East
11	Urban	East
About 11	Urban	East
15	Urban	South
16	Urban	East
17	Rural	West
23	Urban	West
47	Rural	East
51	Semi-Urban	West
59	Urban	East
60	Urban	South
66	Urban	Southwest
90	Rural	East
98	Rural	East
100	Urban	West
100	Rural	Southwest
103*	Urban	East
131	Urban	West
132	Urban	West
148	Urban	East
153	Rural	South
195	Urban	West
210	Rural	West
247	Urban	West
248	Urban	South
840	Rural	South

*In this case, the acreage comprises the grounds for two schools combined under one institutional management.

In the table just given, the regional designations "East" and "West" are determined roughly by the Mississippi

River as a dividing line. According to the table, also, there seems to be a relation betwen location and size, schools in the south and in the west holding comparatively larger areas of ground.

An approximate average of the extent of school grounds, as derived from the above figures, would be 110 acres.

In only one of the 29 schools under consideration are the grounds so cramped that no space is available for campus, farm, garden, or athletic field; in this case the only space provided for outdoor play consists of an inner court. Otherwise, all the schools have set aside a certain portion of their grounds for campus purposes, the range being from half an acre to 90 acres. Seven of the 29 schools have no land devoted to either farm or garden.

In 17 schools a part of the grounds is given over to garden work, the extent varying as follows:

Number of Acres	Number of Schools
½	1
1	1
2	6
2½	1
4	1
5	2
10	3
14	1
20	1

Average 3½ acres.

Ten schools—one of which includes two institutions—maintain each a farm, comprising respectively 6, 20, 30, 34, 35, 65, 100, 150 and 160 acres, the average farm size being 67 acres.

Four schools do not provide athletic grounds; in the remainder of the 28 schools considered, the acreage set aside for this purpose varies from 2 acres in the lowest to 10 acres in the highest, with an approximate average of 4 acres, as shown in the following table:

Space for Athletics, in Acres	Number of Schools
2	4
2 or more	1
2-3	1
3	2
3 or more	1
3½	1
3-4	1
4	2
2-5	1
5	4
6	1
7	1
8 more or less	1
10	2
"ample"	1

Eighteen of 28 schools considered, in addition to the land serving for the school proper, possess other grounds used for various purposes. These tracts—differing in extent—are distributed as follows:

Type of Ground	Number of Schools
Pasture (5, 51, 73, and 111 acres)	4
Woodland (7, 40, and 50 acres)	3
Orchard (3, and 70 acres)	2
Meadow	2
Pasture and woodland (38-40 and 83 acres)	2
Watershed (513 acres); pasture and woodland (160 acres)	1
Woodland and pond	1
Dairy ranch (200 acres)	1
Reservoir (1 acre)	1
Chicken run (3 acres)	1

In most of the schools visited, the grounds were found both fit and adequate. A few schools, 8 in number, operate under handicaps, as indicated in the summary given below—the key numbers being the same as those employed in previous chapters of this report:

R-1. Space for playground and athletics needed.
R-7. Not large enough for farm purposes (35 acres used as a farm).
R-8. Much of the ground is too low and has a tendency to be flooded.
R-11. Inadequate for play and sports.
R-15. Playground and athletic grounds inadequate.
R-18. Grounds too cramped; no playgrounds for girls.
R-26. The site is too uneven.
R-28. Playground for girls too small.

Buildings.—An instructive comparative picture is obtained in the following tabular summary which condenses information concerning the school plants studied during the survey.

TABLE I

School 1924	Age, in Years, of Buildings	No. of Buildings	Character	Condition
R- 1	13 to 74	10	Brick; wood	Good.
R- 2	3	4	Brick	Excellent.
R- 3	15 to 56	8	Brick; wood	Partly good; partly wretched.
R- 4	9 to 46	18	Mainly brick	Partly very good; partly fair.
R- 5	1 to 37	13	Stone; brick; frame	Excellent.
R- 6	Up to 68	8	Stone; brick	Excellent.
R- 7	7 to 54	24	Brick; wood	Fair to good.
R- 8	18 to 48	10	Brick; wood	Excellent.
R- 9	38 to 48	3	Brick	Fair to good.
R-10	22 to 72	16	Brick; frame	Poor to fair.
R-11	8 to 36	1	Brick	Excellent.
R-12	20	3	Brick	Good.
R-13	17 to 35	5	Brick	Fair.
R-14	30 to 32	8	Stone; brick	Excellent.
R-15	9 to 53	8	Brick	Poor to fair.
R-16	*	7	Brick	New.
R-17	1 to 30	17	Brick; wood	Excellent.
R-18	17 to 65	6	Brick	Good.
R-19	4 to 14	7	Brick; wood; concrete	Good.
R-20	5 to 60	5	Brick; wood	Good.
R-21	2 to 75	7	Brick	Mainly good; partly poor.
R-22	25 to 30	14	Brick	Excellent.
R-23	8 to 62	4	Brick	Excellent.
R-24	7 to 67	15	Brick	Fair to good.
R-25	9 to 35	8	Brick	Good to excellent.
R-26	16 to 85	8	Brick; stone	Fair.
R-27	2 to 38	7	Brick	Mainly good.
R-28	25 and up	10	Brick	Fair.
R-29	1 to 6	4	Brick	Excellent.

*In process of construction; one unit completed.

A majority of the schools—19 of the 29—follow outright a centralized or congregate system in their plan of buildings. A modified form of the congregate system, a semi-centralized order, prevails in 5 schools; in these cases

the institution proper is broken up into units, according to either department or sex, although each unit within itself is conducted on the centralized plan. Three schools maintain a semi-cottage system, with the dining room as a central feature. Only 2 of the 29 schools—one of them an entirely new plant—have adopted a cottage arrangement.

The reasons for the adoption of a particular plan of building are given for each of these groups of schools. For those that follow the centralized system, the most frequent explanation is that that type was the only plan known at the time the schools were established, and, because of economy or limited space, the same plan was adhered to in subsequent additions to the plant. A number of other individual reasons given are that the centralized system permits economy and increased efficiency in management; that it affords greater protection against fire; that the prohibitive cost of adjoining property prevented expansion on any other basis; and that it enhances the architectural effect. In one case the school originally had been used as a school for truants and when taken over for deaf children no choice was left as to system of grouping, and finally, in the case of another school that had been but recently constructed as a congregate type institution, the main consideration was the question of the funds available.

The schools conducted on the cottage or quasi-cottage plan maintain that such a system of grouping tends to eliminate the so-called "institution" atmosphere and impart instead that of the home.

Information concerning the condition and equipment of the individual structures in the respective school plants was also obtained in more or less detail.

The rooms in the buildings used for class instruction are first considered. Although schoolroom lighting is obtained in various ways, on the whole it is quite satisfactory in at least two-thirds of the schools visited. The

most effective system, apparently, is one where the light comes from one side through large high windows, with adequate electric light available on dark days. The common fault with this feature in each of the remaining schools is that although some of the classrooms are properly lighted, others are quite deficient in this respect. This is especially true in those schools in which an increase in number of pupils has compelled the use of improvised rooms for class work.

Ventilation of schoolrooms in most cases is obtained by open windows. In only a few cases is it necessary to resort to forced ventilation.

In a majority of the schools, the blackboards in the schoolrooms are of slate and supplied in sufficient quantity. A few schools, in supplementing their supply of blackboarding, have added boards of composition or plaster, some of a poor quality.

The seats and desks of pupils in approximately a third of the schools studied are modern in character, the Molthrop type being especially prominent. In the other schools, this equipment is on the whole serviceable, but not all modern in type.

One form or another of special miscellaneous equipment, tending to add to the effectiveness, as well as to the general attractiveness, of the classrooms, was found in at least half of the schools. Among these were an abundant supply of pictures, books, models, charts and maps, apparatus for teaching science, plants and flowers, large closets, transoms over the doors, chairs with tablet arms, bookcases, and especially good lighting and ventilating facilities. Such features deserve a place in the plan of the model school.

It is necessary, also, to mention certain other features present in some schools which, if not remedied, must surely detract from the efficiency of classroom work. These include rooms that are too small, that are antiquated in layout and equipment, that are bare and unattractive

in appearance, and that need painting with an appealing color. In one instance, the schoolhouse in reality consists of a large shed, with rooms boarded off inside, the partitions not even reaching the ceiling.

Nine of the 29 schools possess no equipment for auricular work. Most of the other schools—14 out of 20—employ at least one piano for this purpose. A variety of other devices also used includes hearing tubes (6), whistles (4), audiometer (4), acousticon (4), audiphone (4), tuning forks (2), bells (2), megaphones (2), multiacousticon (1), horns (1), drum (1), squawkers (1), multiphone (1), radio with special intensity adjustment (1), and "hearing devices of all sorts" (1),—the figures representing the number of schools using each type.

At the time of the survey, only 1 of the 29 schools had no provision in its trades department for instruction in printing. Also, all but 2 of the other 28 taught linotype operating, one of them with a battery of 8 machines. The equipment of the respective school print shops on the whole testifies to the fact that proper emphasis is given to this phase of the training of deaf pupils, particularly of deaf boys. In some instances, however, there is a decided difference in the completeness of equipment. Thus, one very large school is furnished with a single linotype machine of an older make, whereas another school, with possibly one third the school population of the former, enjoys the use of 2 machines.

One school in taking inventory of its print shop equipment, listed the different items with their values. This list, which may very well be taken as a typical supply for this department, is as follows:

1 Model 19 Linotype Machine with Equipment	$3,000.
1 Model 8 Linotype Machine with Equipment	2,896.
1 10 x 15 C & P Job Press with 3 Chases	350.
1 10 x 15 C & P Job Press with 2 Chases	250.
1 Babcock Optimus Cylinder Press with 3 Chases	2,700.
1 Poco Proof Press and Stand	233.
1 C & P 34" Paper Cutter with 10 Sticks	600.
1 Ink and Roller Cabinet and Contents	35.
1 Machinist's Work Bench with Tools	125.

1	No. 5 Boston Wire Sticher with 2 spools of Wire	250.
1	Acme Wire Stapler and 2 Boxes of Staples	12.
1	Yarger Wire Stapler (not in use)	5.
1	15" Perforator with one Set of Needles	10.
2	Adman's Cabinets with Contents	1,300.
1	Case Rack with Brass Top for Dumb and Type Contents	6.
2	1-Tier Type Cabinets with Type Contents	60.
1	1-Tier Type Cabinet with Type, Border and Ornaments	20.
1	32" x 94" Imposing Table	10.
1	63" x 39" Imposing Table with Letter Boards	370.
1	38" x 37" Imposing Table with Letter Boards	175.
1	Wood Furniture Cabinet with Contents	49.
1	Reglet Cabinet with Contents	28.
1	Rouse Mitering Machine	30.
1	Rouse Lead and Rule Cutter	20.
1	Golding Lino-slug Cutter	10.
1	Galley Storage Cabinet with Space for 50 Galleys	39.
2	Iron Pipe Galley Racks attached to Wall	6.
1	Linotype Dross Drum and Dross Contents	15.
1	Matrix Block and 2 Slides	12.
2	Stands with Cabinets and 500 Lbs. of Body Types	35.
1	Gasoline Metal Furnace Completely Equipped	85.
2	Ingot Molds with Supplies	10.
30	Press Rollers for large and small Presses	65.
1	Mustang Mailer and 12 mailing Galleys with Type	10.
	Total Estimate	$12,821.

All of the schools studied maintain a woodworking department for purposes of instruction. In most of them, also a good part of the equipment is in the form of machinery electrically driven, and as a rule, in serviceable condition. In but a few instances is the cabinet shop poorly equipped, that is, having little in the way of practical labor-saving machinery, with the tools and benches old and worn.

The following shows how the carpenter shop in an average school of fair size may be outfitted.

1 No. 1 Planer and Matcher
1 Hand Planer and Jointer, Style A
1 Single Spindle Shaper
3 Turning Lathes
1 No. 2 Tenoner
1 Band Saw
1 Foot Power Scroll Saw
1 Foot Power Morticer
1 Circular Saw
and the usual Hand Tools, Benches, Etc.

To go into detail concerning the equipment provided

for each part of the trades teaching course in the schools studied would prolong this report to an unnecessary extent. With the exception of printing and woodworking for boys, and the household arts for girls, there is no general agreement on the other trades taught, but those that are taken up are as a rule adequately provided for in the matter of equipment. The industries involved include shoemaking, baking, barbering, tailoring, sign paintting, dairying, gardening, farming, bricklaying, cementing, ironing, dressmaking, millinery and weaving.

Only 4 of the 29 schools fail to provide either gymnasium facilities or apparatus for physical training. However, 3 of these schools are situated in a part of the country where weather conditions permit out-of-door sports most of the time; the other makes use of Y. M. C. A. and Y. W. C. A. gymnasiums in the same city.

In addition to the regular gymnasium work it is the practice of most of the schools to make provision for indoor sports.

Practically all the schools studied also recognize the need of special space indoors for play, and for this purpose set aside certain rooms, the chief requisites being spaciousness, light, and air. Such rooms are usually found either on the first, or ground floor or in the basement. In a very few schools where no such special room is available, the gymnasium is used.

In the opinion of the visiting representative of the National Research Council, the general condition of equipment and furnishing in the dormitories of the schools visited is excellent in 14 schools, good in 4 schools, and fair in 8 schools.

In the dormitories of 4 schools, no furnishing other than the beds is provided; chairs extra in 3 other schools; and lockers in addition to beds, in 6. In the 16 remaining schools the equipment includes beds, chairs, and one or more of the following: lockers, wardrobes, closets, dressing stands, dressers, tables, rugs, pictures.

In only a few schools, 5 in number, was there any question as to adequacy of dormitory space in proportion to the number of children cared for.

A most important part of the maintenance feature of residential schools is that of kitchen arrangements. For cooking purposes, 9 schools depend upon coal for fuel; 9 use natural gas; 6, both gas and coal; 2, wood and coal; 1, wood and electricity; 1, coal and electricity; and 1, wood. With the exception of 4 schools, all use steam in the preparation of food. In a great majority—20 of the 29 schools—the equipment is of a modern type, supplemented as a rule by labor-saving devices, and in either very good or excellent condition. In the remaining schools, the defect lies in the fact that the equipment is too old-fashioned, that it is inadequate for the needs of the school, or that there is a lack of labor and time-saving apparatus.

Among the special kitchen features noted were such items as tiled floors, high ceilings, special kitchen ventilation and lighting, and a great variety of accessory devices, many electrically operated. In two schools at least, the kitchen apparently is the last word in efficiency. In one of these schools, the kitchen is constructed with tile floors, glazed brick non-absorbent walls, electric ventilation to draw out the bad air, and a detached scullery; the equipment includes among other things a steam cooker, meat roaster, cereal vats, soup vats, steam pressure cookers for vegetables and meats, large electric toaster, electric dishwasher, sheet-metal bread storer, a cup and plate warmer, electrical slicers, cutters and peelers, and the most modern type of refrigeration.

In 2 cases the kitchen is too small, too dark, poorly ventilated, and at too great a distance from the dining room.

Twelve of the 29 schools studied are supplied with special farm and dairy equipment, 2 of the 12 being served by the same farm and dairy. Seven of the school

dairies have no sterilizing equipment; the other 4 depend upon steam or boiling water for this purpose. In 3 cases there is no cooling system; in 3 others cooling is obtained by ice water, and in the other 5 cold storage or refrigeration is depended upon. It is interesting to note that only 1 of the 11 school dairies is provided with bottling equipment. Neither is there any milking apparatus in 7 of the same schools. Four of them use electric milking machines.

MEDICAL CARE

Custodial care in a residential school for the deaf involves problems in addition to those of the schoolroom. Among these is that of attending to the physical welfare of the pupils. Thus, 15 of the 29 schools are prepared with the necessary facilities to take care of all ordinary dental work; in most of the others the children are taken to nearby or local dentists for the necessary attention. In one school the children go to a dental clinic in the city for emergency work, but twice a year full dental equipment—with at least 15 chairs—is sent to the school for two days. Only 2 of the 29 schools are fully prepared with equipment to prescribe for defects of vision. In a few other instances this work is done by specialists who take out their own apparatus to the school. In almost every other case, the children are taken to outside oculists, who in some instances are members of the school medical staff. Only 2 schools, also, are equipped to carry out ear examinations, and in 2 other instances, also, specialists take their own apparatus to the school for the same purpose.

Approximately two-thirds of the schools studied—20 of the 29—are not furnished with any equipment for surgical cases, such work being attended to at neighboring hospitals. The remaining 9 schools are prepared to attend to "minor operations," such as the removal of tonsils or adenoids, in the school infirmary.

Only 1 of the 29 schools concerned does not regularly

engage the services of a physician; in that school one is called only by special request. Five other schools regularly employ a physician who is compensated by visit. In a great majority of cases a non-resident doctor gives his services on salary, which in a number of instances is merely a nominal stipend. Six schools do not have the services of any specialists. For the other 23 schools, there is a variety of expert attention at call. Thus, 7 of them engage a dentist, an oculist, and an aurist; 3, an oculist and an aurist; 2, a dentist; and the others are able in cases of emergency to call upon a consulting school staff that varies in size and which may include physicians, surgeons, dentists, and eye, ear, nose, throat and skin specialists. This expert help is in a number of cases obtained gratis, sometimes by an arrangement with neighboring hospitals.

Eleven of the schools studied employ a trained nurse; 2 other schools each employ 2 trained nurses; one has 3 trained nurses with 2 assistants; in 1 case there is a trained nurse with 3 assistants; in another, 1 with 2 practical nurses; and in 2 others 1 trained and 1 practical nurse. Five schools employ regularly a practical nurse.

All but 2 of the 29 schools are prepared in case of need to take care of contagious cases, although in a number of instances only to a limited extent. Most of the schools also are equipped with ordinary infirmary or hospital facilities.

More than two-thirds of the schools—21 out of the 29—have children examined physically on admission; 2 other schools require this shortly after admission.

Physical examination of pupils when they return after the summer vacation is required in only 8 of the 29 schools; shortly after their return, in 1 other school; and in still 1 other case only of those pupils from homes where illness had been reported. Only 4 of the same schools have such an examination at the close of short vacations. A periodic examination during the school

year is given in 13 of the schools; in one of these cases it is twice a day, in another every day by the nurse, in still one other the primary children are examined twice a week and the larger children once a week, and in one other school only once a year.

In 22 of the 29 schools, pupils must be vaccinated against smallpox; in 3 other schools all children are vaccinated, except in cases when parents object. Only 4 schools have not taken this preventive measure, although 1 of these has indicated its intention to fall in line.

Only a fourth of the schools studied—7 of the 29—require inoculation against typhoid fever. In 3 others it is a conditional requirement, that is, only when an epidemic threatens, only "on occasion," or "not regularly."

There is no decided attitude on the matter of giving the Wassermann test in the schools studied. In a majority of cases—18 out of 29—this is done only upon the advice of the school physician, usually in suspicious cases alone. Four schools have adopted the policy of requiring this test of all their pupils, although in one case exception is made when there is objection.

For a majority of the schools studied—17 of the 29—no other medical preventive measure is taken.

As a precautionary step against diphtheria, the Schick test, followed by prophylactic treatment when necessary, is given in the 12 remaining schools; in one of them this is the practice only with new pupils.

In approximately half of the schools—14 of the 29—the necessary dental work is done by a dentist on salary who makes periodic visits to the school. In one other school this work is done free under the direction of the dental department of a local university, and in another instance a dentist sent periodically by the state department of health does the work. In all other cases, children are taken to outside dental offices, the parents as a rule being asked to pay. When the parents are unable to meet this cost, the home county in some cases, or the state in

others, assumes the expense, and sometimes the school is compelled to pay.

The practice regarding the eyes of the children in most of the schools under consideration, is to send cases requiring special attention to an outside oculist, who in some instances is paid a salary by the school. In 2 schools this work is of a more systematic nature, the school providing the equipment and the specialist on salary making periodic visits to examine all the children and prescribe for defects when necessary. The same type of service is rendered in 4 other schools by outside oculists who take their own equipment with them. Practically the same arrangement holds for treatment of ear cases by aurists.

Quite a number of schools—12 of the 29 studied—make no systematic attempt to test the hearing of pupils on entrance. Eight schools test the hearing on entrance as a regular practice, and in 2 other cases, this is to be adopted as part of the school policy. The procedure in the remaining 7 schools is of a general nature, that is, it is not carried out either scientifically or systematically. Neither do the schools conduct such tests at regular intervals during the school course; at best, only 5 of the 29 schools make such an attempt, 4 others plan to do so, and in 1 other case this is done at irregular intervals.

Most of the schools keep weight charts which are used in connection with diet. The general practice, also, in cases of children who show a falling off in weight is to report the matter to the school physician who prescribes remedial measures, usually a special diet.

On the whole, the general sanitary conditions in the schools visited are kept to a most satisfactory standard, cleanliness, in particular, receiving marked stress. The few exceptions to the rule reveal such conditions as an unsanitary cowbarn among the farm buildings, overcrowded dormitories and inadequate bathing facilities—all in one school, toilet construction of an obsolete type

in another school, and inadequate in 2 others, and general neglect of the negro department in one other school.

The general sanitary precautions taken, named here in the order in which they are referred to as protective measures, are cleanliness, frequent bathing, good food, constant inspection, medical care, pure water, watchfulness on the part of matron, nurse and doctor, and teaching of hygiene.

All but 5 of the 29 schools included in the survey comply with regulations laid down by health authorities. In a majority of cases—14—the schools are subject to city health department rules; in 4 other schools both city and state requirements must be met; in one case the city and county rules prevail; and 5 others are governed by state regulations alone.

FOOD

For the majority of schools under study—17 of the 29—the bills of fare are not prepared by a trained dietician. Only 8 of the entire number have the advantage of such expert advice; in one of these, also, a most interesting arrangement prevails. Here the dietary is prepared by a dietetic council composed of the state dietician, the school disbursing agent, who figures out costs, the school nurse, the cook, and the superintendent. In the 4 remaining schools, the table fare is planned by experienced matrons, in one case a trained dietician being consulted.

Most of the schools arrange a balanced ration for the daily fare. In only 5 of the 29 schools is there any question concerning this.

The purchasing tendency apparently is to obtain the general food supply in open market, 14 of the 29 schools finding it practical to deal in that manner. Ten other schools obtain their supply of staple foodstuffs, such as meats, canned goods, butter, cheese, flour and general groceries, by contract, and perishable articles, such as fruit and vegetables, in open market. In 3 schools, prac-

tically all supplies are purchased on contract by the state purchasing agency, and in 2 others all foodstuffs, with the exception of fruits and vegetables raised on the school farm, are also bought by contract. In 12 cases, the milk supply is obtained from the school herd, and in all but one of the remaining schools from standard inspected dairies, the one exception depending upon a private dairy.

Only one of the 29 schools is handicapped by having the funds allowed for food limited to a set amount by appropriation or legislation, the stipulation in this case being that purchases of food must not exceed 25 cents a day per pupil. One other school has a definite appropriation for food supply, but this is set at a generous figure; if this sum is exhausted, the school may fall back upon an emergency fund.

Of the 11 school herds that are maintained, 6 have the milk tested regularly for bacteria, and only 5 of them have it regularly tested for butterfat. All of the schools herds are examined for tuberculosis, but in only 2 cases are the milkers regularly examined.

Only 6 of the 29 schools take the precaution of having cooks and all helpers who handle the food examined by a physician. In 3 of these cases it is regular inspection; in one it is every 3 months; and in the other two schools such persons are examined when they are first employed and thereafter when the superintendent deems necessary.

In general, the food in the various residential schools is palatably prepared and carefully served. On the whole, also, the average menu indicates a wholesome and satisfying variety and, with an abundance of supply, accounts for the well nourished appearance of the pupils.

FIRE PROTECTION

Various means—and sometimes lack of means—mark the efforts of the schools studied to obtain protection against fire.

Most of the schools, 23 of the 29, in compliance with public fire requirements, provide a sufficient number of fire exits in occupied buildings. However, 10 of the 23 schools do not have such exits properly marked; in some of them they are not marked at all.

In 3 of the 6 remaining schools the form of protection already referred to is only partly satisfactory, and in the other 3 instances the schools are quite delinquent in this respect. These and other defects in the measures taken to guard against the dangers of fire will be again considered later on in this discussion of the subject.

Most of the schools are equipped with a supply of fire hose and extinguishers, although only 5 of the 29 have chemical engines.

In the judgment of the visiting representatives, 4 of the 29 schools are poorly equipped with fire escape facilities. Three others are only in part adequately prepared. In the first of the latter group the escapes are not all well located for quick exit; in the second the main building lacks them; and in the third the girls' building is fireproof but the other buildings do not have sufficient escapes. Further, at least half of the 29 schools visited do not have the fire escapes lighted for night use.

Seven of the 29 schools, possibly because of their location, have no other fire alarm arrangement than that of telephoning in case of need to the nearest fire department station. In 11 other schools there is a direct alarm connection with either local or neighboring city system. Ten schools maintain a double arrangement, an inside system of bells, horns or whistles, and an outside connection with the city system, although in 3 of these cases the telephone is the means of calling for outside help. In one other school, two short blasts and a long whistle are depended upon as a call to the city fire department.

In 20 schools the water supply for fire purposes is obtained by city connections. In 2 other cases the city supply is supplemented by a school reservoir or reserve

tank operating under pressure; in still another case, the city and a neighboring state hospital furnish the water. The water pressure needs of one school are looked after by an outside water company. The remaining 5 schools depend upon individual local systems, respectively, as follows: 1. operating under fair pressure; 2. a large reservoir furnishing an abundant supply under 200 lbs. static pressure; 3. a pressure tank (40 to 65 lbs.) storing 2,400 gallons obtained from a well; 4. two tanks (10,000 and 50,000 gallons) worked by an electric pump; 5. an inadequate supply under low pressure.

Only 4 of the 29 schools included in the survey make no provision for fire drills. Four others hold such drills rather infrequently, none at night and none without notice.

Of the remainder:

8 schools hold fire drills practically once a month;*
1 school holds them as often as once in 3 weeks;
2 schools hold them fortnightly;
5 schools hold them once a week;**
2 schools hold them frequently, but at no stated time; and
3 schools hold them "occasionally."

*In one of these cases such monthly drills refer to the dormitories; in the school building they are held weekly. In another case only the advanced and intermediate grades take part.

**In one of these schools the drills are held every Saturday for the white children only; in another case the drills take place in the school building, and not regularly in the dormitories. In still another of these instances, they are held only in the school.

With 3 exceptions, all the schools having drills make it a policy to hold them without informing the children in advance. However, only 8 of the entire 29 schools conduct fire drills at night, and in half of these this is done only occasionally, not as a regular practice.

One cannot leave the study of fire protection without noting peculiarly striking conditions in some cases. Thus, the building for negro children in one school is a fire trap and the building for white pupils is not well protected. In the same school the chapel is located on the third floor and no hearing person resides in a building

where 150 deaf boys are housed. Another school presents the following conditions: the negro department is heated by 8 stoves; no fire escapes; two wooden flights of stairs lead from the dormitories where 44 children sleep. Another school: although fire drills are held only occasionally, one old building here is a veritable fire trap.

In contrast to such conditions are those that prevail in other schools where buildings are not more than two stories high, where the construction is of fireproof or semi-fireproof materials and where exits, escapes and safe-guarding equipment and discipline assure a minimum of danger of injury or loss of life.

Marked contrast in fire protection is revealed in two particular schools, each with a large enrollment. In one of these the exits from the dormitories are probably insufficient and not marked, and the supply of fire-fighting equipment consists of a few hand grenades and some fire hose. The fire escapes do not seem adequate, they are not lighted for night use, and the exits to them are locked and the keys kept by the person in charge. In the other school, the fire exits are sufficient and marked with red lights at night. The buildings are of stone, with iron stairways and escapes. When a door or exit to the fire escape opens, the lights in the dormitories are automatically turned on and a bell continues ringing until some one stops it. A hearing supervisor sleeps near each dormitory.

GENERAL IMPRESSIONS

The more striking aspects, especially those relating to physical make-up, of the schools visited during the survey, as they impressed the representatives of the National Research Council, are noted in the following resumé.

R-1. The grounds are beautifully kept, and the plant on the whole is in good repair. The buildings are crowded, especially the one for girls. A primary building is needed to relieve the cramped condition in schoolrooms, dining room and dormitories. The boys' dormitory has numerous

exits but no fire escapes. Part of the pasture land could be graded into an athletic field. A most impressive feature of the school is its immaculate neatness.

R-2. A new plant, and still in the process of growth toward physical completeness. A new gymnasium was being erected at the time of the survey, and the grounds had not yet been finally graded. The buildings throughout are of fireproof construction. In some of the classes the work done seems to be of a superior nature, although the teachers are not so well paid as those in other schools. The interest and leadership of the teachers have made possible a most successful girls' scout organization. The printing department is to be commended. The school apparently is suffering from too low a per capita allowance. A supervising teacher is very much needed to relieve the principal of some of the all-too-numerous duties that are now his.

R-3. A new schoolhouse is an absolute necessity. More dormitory room for primary children, a new hospital building, and a new building for the negro pupils are some of the other urgent needs of this school. Playrooms also should be provided. Under present conditions the fire protection is entirely inadequate; the negro building in particular is a standing menace. Some of the shopwork is very good; in fact, the industrial work seems to be more advanced than the academic. Too many of the teachers are both inexperienced and without the proper training.

R-4. On the whole the plant is in good condition and attractive in appearance, although much of the furnishing is battered. A primary hall is one of the needs of the school. The schoolrooms could be made more attractive. The school discipline is very lax.

R-5. A new primary building and a more modern power house would probably add to the efficiency of this school. Additions to the plant in the form of a service building and an up-to-date gymnasium have been recent

steps in its growth. The plant and equipment are in excellent condition; the buildings are attractive, modern and well furnished. The school also is equipped with a fine collection of books. In every respect conditions are conducive to good work. Special features are the poultry farming activities engaged in by the pupils and the cottage set aside for domestic science teaching. A teaching corps animated by a morale of high order, an energetic and capable superintendent, and a deeply interested board of directors in part account for the high standing of the school.

R-6. The plant and equipment are kept in excellent repair. Although some of the buildings are of an older type, they are serviceable. The school also is well equipped for its work. The dormitories seem overcrowded. The industrial part of the plant should be renovated. The hospital facilities are a special feature, as are also the constant medical inspection and cleanliness in all departments. The military system is in effect here. Possibly too much energy is expended on the routine of the business management of the school.

R-7. A new administration building and additions to the main school group as well as facilities for natural expansion should be obtained. The dormitories are suitable, but the schoolrooms are too scattered. Kitchen facilities are not very convenient. The gymnasium space is too small. The plant as a whole is in good condition; however, its lack of compactness makes it expensive to maintain. Although its system of fire protection is adequate, fire drills should be instituted.

R-8. Much of the ground here is too low and is likely to be flooded. The primary building is a model of construction; however, an annex to it for additional accommodations would be desirable. Otherwise the plant is in excellent shape throughout. The school work is carefully supervised, and the industrial work is of an exceptional order.

R-9. A new dormitory building for girls, with adequate playrooms, to be located nearer the main school building, is needed. The present girls' building is an old residence not well adapted for dormitory purposes. The school structure itself should be enlarged. There should also be a central dining room and kitchen for the boys and girls, and indoor play space for boys.

R-10. A new central school building, a new hospital and an administration building are needed. The present primary building is a modern structure, but the schoolrooms for the upper grades are antiquated. The shops, especially the woodworking and printing departments, are well equipped. The teaching staff, composed of well trained members, is achieving steady, practical results.

R-11. A peculiar feature relates to the school site. The school plot is owned by the city and rented by the school for 99 years at $1 a year, with water supplied by the city. The theoretical danger here is that at the end of this period the city may refuse to renew the lease; the land itself is now worth a million dollars. The limited space now at the disposal of the school affords very little opportunity for growth or expansion in the plant. It is also quite inadequate for play or sports. The buildings and equipment are kept in excellent condition. The sanitary precautions and the medical care provided are marked features. The type of school work done is of the best, marked by excellent supervision, good organization, and a corps of conscientious and well trained teachers. Under the inspiration of its head, the school keeps abreast of progressive tendencies.

R-12. The grounds of the school are adequate for its purpose, but they are not so attractive as they could be. The classrooms in the main building are possibly too small and unattractive. A gymnasium should be added, and a primary building would also be desirable. As it is, the plant is in good condition. The measures taken for fire protection are satisfactory in the buildings for white

pupils; in the negro department fire conditions are quite unsatisfactory.

R-13. The needs of this school are a new gymnasium, a new industrial building, and a school for the negro children. The present dormitories are very attractively furnished, giving a general homelike appearance quite unusual in an institution. On the whole the plant seems to be in good repair. Excellent discipline is obtained, apparently by keeping the children busy all the time.

R-14. To meet natural growth, more dormitory space and more classrooms should be provided. Owing to present crowded conditions, it has been necessary to improvise dormitories and classrooms in places that do not prove entirely satisfactory for these purposes. The present gymnasium is quite small; a new one is needed. The plant as a whole shows some wear, but it is in excellent condition. Cleanliness is the watchword in every department. An improved fire alarm system is installed. This is another instance of "one of the best" schools. The work accomplished, directed by superlative supervision, is highly efficient.

R-15. This school probably should be more centrally located in the state. The needs here are quite definite; they include a new main building, a new industrial building, a new hospital building and a residence for the superintendent. The present main building and the shop building are antiquated and a fire menace. The gymnasium is large and well equipped. The plant is in fair condition in places and poor in others. Paint is badly needed, the walks are broken up, and repairs should be made. In short, the plant in its present state is quite unattractive for a school. Higher salaries should be paid to attract better trained teachers.

R-16. At the time of the survey the plant of this school was in process of construction. The units already completed are the last word in architectural convenience for school, dormitory and household purposes, the cot-

tage system prevailing. Model equipment and furnishing have been provided. If the plant can be carried to completion on the same scale, it should serve as a model school.

Under competent principals of the various departments, the superintendent has built up an efficient staff of instruction. Remarkable efficiency has been attained along the lines of trades teaching, a commendable feature of this department being the post-graduate courses offered. The military system is in effect, but only as a physical training project and not as a method of moral training. Pupil organizations deal with cases of discipline.

R-17. The school is fortunate in the grounds is possesses, and, with a perfectly adequate plant in excellent condition, has a substantial background for the work it is doing. A new shop building would be an asset, but is not an absolute necessity at present. The equpiment and furnishing throughout are highly satisfactory. The dormitories are clean, well lighted and well ventilated, with comparatively few children to a room. The protection against fire does not seem adequate in the main building, especially in the lack of fire escapes. A fire drill system should be inaugurated. Teachers' salaries are low, and as a result the staff is constantly changing. Nevertheless, an excellent system of supervision keeps the standard of work at a high level.

R-18. The grounds of this school are too small for the needs of its pupil enrollment, the girls, for instance, having no playground. In consideration of the fact that the buildings are not of recent construction, the plant may be said to be in good condition. The school building and the hospital serve their purposes very well. The main building, where the dormitories are located, although well kept, is too cramped. The toilet rooms are not near the sleeping quarters, the matrons' rooms are not adjacent to the dormitories in some cases, and the arrangement for fire protection is not very assuring. The rooms for larger boys are not very pleasing in appearance, but those for

the larger girls are very attractive. In the dormitories themselves, a most undesirable condition exists; for the small boys there are 42 single beds for 63 individuals, for larger boys 61 beds for 65 boys, and for the girls, 42 beds for 52 children. Evidently, the school has not kept pace physically with the increase in its population; it has outgrown its equipment. A new main building of a modern type is a crying need.

The school is worthy of generous support when the state budget is made out. The superintendent, an educator of note, has built up a constructive course of study. The reading program and the library equipment combine as an admirable feature of the school work. Rhythm work is a definite part of the curriculum, not a desultory experiment. The schoolrooms are lavishly supplied with maps, charts, nature cabinets, pictures and models. A well appointed print shop leads an efficient industrial department.

R-19. A building for the primary department would relieve the present crowded condition of the dormitories. The school plant itself makes an attractive appearance, and physically is in good repair. The trades teaching seems to be thorough. Lack of funds makes large classes necessary. Higher salaries should be paid and more teachers employed. A system of fire drills should be established.

R-20. The plant here formerly housed a school for truants. It is in good condition so far as an old plant can be made so. The older buildings, however, are makeshifts. They are not adapted to the work of a school for the deaf and should be replaced by an entirely new outfit. Despite the present unsatisfactory physical conditions, every sanitary precaution is taken, and a rigid system of fire protection instituted. The school also lacks a gymnasium.

A high standard of school work is maintained, the result of an efficient morale in its staff of instruction. A

home atmosphere pervades the entire system. Every building used by the pupils is abundantly supplied with books. The carpenter shop is well equipped, but the printing office could be improved by the addition of a linotype machine.

R-21. At the time of the survey a hospital building was in process of erection. The gymnasium and the industrial buildings are both too small and in poor condition, and the quarters for negro pupils are in need of repairs. A lack of funds is a handicap to improvement along these lines. Better trained teachers for the negro department would be desirable. On the whole, a spirit of marked sincerity prevails in all departments of the school.

R-22. Although the grounds are not so attractive as they could be, the school plant itself is in perfect repair and the equipment serviceable in all details. Cleanliness everywhere is stressed. The group of buildings for the girls is a model of completeness designed to combine both thoroughness of service and beauty, its library and its chapel being especially impressive. The work done seems to be of a practical nature, especially along "hand" lines. In one of the divisions of the school, excellent training in millinery and dressmaking is given. Although each of the school units is really a large institution in itself, a semi-cottage effect is produced by a method of grouping the pupils, each group of 25 having its own dormitory, playroom, dining room service, and supervisor.

R-23. This school seems to be complete in every detail, with a plant that is modern throughout and well adapted for its work. The members of the staff are all trained and show devotion to their work. The course of study is well organized.

R-24. The dormitories are rather crowded, and more room for this purpose should be provided. In the gymnasium the space is large enough but it is much cut up, a condition that can be remedied by tearing down parti-

tions and remodeling, or else by erecting a new structure. The cabinet shop does not seem suitable for its work; in general, a better industrial building is needed. Some of the classrooms are bare and unattractive. Part of the plumbing arrangement is of an obsolete type. Hospital facilities, also, should be increased and fire drills instituted. Excellent discipline prevails throughout the school.

R-25. Among the needs of this school are a new shop building, a new gymnasium, and a cottage for the older girls. The plant everywhere is in good condition. The primary building is artistically equipped and provides for every convenience. The school work seems to be of a high order, concentrating on establishing a language atmosphere.

R-26. Although from the outside the buildings make a pleasing appearance, on the inside they are not very attractive. The school seems to have the old "institution" air about it. The buildings also are crowded, and in some respects antiquated. They probably could not be modernized, except at great expense. Improvements and more room, however, are greatly needed. Among the special needs are a primary building, a gymnasium, a hospital, and a home for the superintendent. Criticism could be directed at some of the toilet facilities in the dormitories, the lack of heat in sleeping quarters, the poorly arranged kitchen, and the condition of the cowbarn.

Salaries of the teachers should be increased. However, the head of the school, with the aid of a well organized staff, is making valiant efforts to raise the standard of work. The course of study in the different departments is well supervised, and a point of merit is the effort expended to bring the manual department to the same state of efficiency that prevails in the oral department.

R-27. The buildings are in fairly good condition, except for the administration building which has been condemned as a fire trap. A gymnasium, an administration building, more dormitory space, and a cottage for the

family of the superintendent are required. The shops are poorly lighted and the industrial work is not very good. The boys' building should be equipped with fire escapes, and the general system of protection against fire should be improved.

R-28. A dining room for primary pupils, additional quarters for officers, and a playground for girls are among the needs of this school. Much of the plant is in poor repair, largely because funds are limited. Improved equipment in the dormitories should be provided and new toilet and bathing facilities should be installed. The shops are not supplied with modern machinery. The primary building should be equipped with fire escapes.

The school work is undergoing reorganization, and under the capable leadership of the superintendent and principals of the different departments is being placed on a satisfactory basis. The united effort of the same officers is reflected in a wholesome morale throughout the school.

R-29. The plant of this school is in very good condition, and the equipment quite satisfactory. However, there is need of a larger dining room, more hospital space, more schoolrooms, and more and better trained teachers. The fire exit arrangements are inadequate. On the whole the school seems to be managed efficiently.

CHAPTER VII

THE COMPOSITE PUBLIC RESIDENTIAL SCHOOL FOR THE DEAF

A review of the data thus far presented may well serve as the basis for a determination of what constitutes the composite residential school for the deaf. Such a type school, constructed as it is from the information volunteered by the officials of the institutions included in the survey, is not necessarily to be taken as the model school. It stands, in its various phases, merely as the sum of those features and practices that are most commonly employed—taking the 29 typical residential schools for the deaf in the survey as the background. The result, roughly speaking, is the typical American school for the deaf.

General Management.—In the first place, the typical American school receives state support either wholly or in large measure, and is non-denominational in character. It is governed by a special board of management under public authority which devotes its attention solely to the institution. A political feature, however, dominates—in theory, if not in substance— the choice of the members of this special board, the governor of the state appointing them. Despite this, the non-partisan character of the board is maintained by so far as possible an equal division of appointees among the dominant parties.

Managing Officer.—The managing officer, bearing the title of superintendent, and appointed by and responsible to the board of control, is chosen for an indefinite period, dependent upon the pleasure of the same board. The superintendent controls the disbursement of funds, appoints teachers with the approval of the board, appoints all other employees of the school himself, supervises the school work, although he has assistance for this, and has a responsible business assistant as well. If one would judge by the opinion of school heads, the superin-

tendent, serving for an indefinite period or during efficiency, should assume complete responsibility for the conduct and welfare of the school in all its departments, answerable to his managing board.

Financial Support.—Public appropriations for the support of the typical school are voted in lump sum for a biennial period, and are made available on the basis of a budget system.

For its own state pupils, even though there is ability to pay, the school is not permitted to charge tuition fees. Nor is admission denied residents of other states, although they are required to pay tuition and, further, must await prior consideration for applicants from the home state. Tuition fees, when imposed, are approximately $500 a year.

The concensus of opinion of school executives is in favor of state appropriations as the best basis of support.

In the budget allotment there is no specific per capita allowance.

Finances.—Taking the median of the schools giving data as the representative figure, the percentage of increase in per capita cost during the decade between 1914 and 1924 was 46, the percentage of increase in total expenditure over the same period was also 46, and the percentage of increase for salaries, 73.5. The per capita cost for maintenance and repairs alone, during the fiscal year preceding the survey, was $546, this being the median for the schools surveyed.

The average sum expended for new buildings during the period from 1914 to 1924 was $184,552, and for remodeling and repairing during the same period, $55,211.

School Administration. — The superintendent in the typical school governs the members of the teaching force directly, and is in turn assisted by teachers and officers in the management of the pupils. Business matters, characterized more or less by a maze of minuteness and

subject to thorough scrutiny and check back, also are conducted directly through the executive office. Much of the complicated routine probably could be eliminated or diverted, thereby permitting the superintendent to devote more of his energies to the educational side of the school.

Admission of Pupils.—There is no marked tendency as regards the age limit within which pupils are admitted. Admission is restricted otherwise to those children whose hearing is so impaired that they are unable to make normal progress in the ordinary public schools and who can benefit by attendance at a school for the deaf. Feeble-minded children are specifically excluded, no special provision, sad to say, being made for them. Also, there is no distinction as to race or color in the admission of pupils. And finally, authority to admit or decline pupils rests with the superintendent of the school.

The length of school life permitted is indeterminate, final decision resting with the controlling board.

Legal Status.—The typical school is legally not a charitable institution, nor does it carry in its title such terms as "asylum," "dumb," or "mute." Neither is compulsory attendance incumbent upon its pupils, so far as the law is concerned, and further, there is no statute in force for the average school by which public officials are compelled to notify the superintendent of children who ought to enter a school for the deaf. Also, legally the method of instruction is not prescribed.

The Teaching Corps.—The general qualifications demanded of applicants for positions on the teaching force are high school training and at least a year of special training or experience in schools for the deaf.

Again relying upon the median for all the schools studied as a representative figure, the percentage of academic teachers in the composite institution who are normal school graduates is 40, and the percentage of those who are college graduates is 30. The percentage of

men among the academic teachers is 14.5, and women 85.5. Fourteen per cent of the academic teachers also are deaf persons.

The qualification demanded of industrial teachers is at least that they possess proficiency in the trades they teach. Of such teachers, 60 per cent are men and 43 per cent of all are deaf.

A comparison of the various figures just given—summarized as follows:

	Median	Percentage of		
	Men	Women	Hearing	Deaf
Among Academic Teachers.....	14.5	85.5	86	14
Among Trades Teachers.....	60	40	57	43

indicates that there is in the trades departments of the typical school a preponderance of men teachers as well as a greater reliance upon deaf teachers.

Salaries.—The average monthly allowance when it is granted teachers in the composite school for maintenance is $38. Further, there is no schedule of regular increases in salary until a maximum is reached, nor are the advantages of a pension plan available for the teachers.

The salary of the superintendent in the typical school is between $3,300 and $3,500, with maintenance, for 12 months of service. For principals or supervising teachers, the compensation with maintenance is between $162 and $212 a month; without maintenance, approximately $250.

The average minimum and maximum salaries per month for academic men teachers are $114 and $144, respectively, with maintenance, and $165 and $207 without maintenance; for women, $70 and $120 with, and $118 and $186 without, maintenance. For industrial teachers they are: men, $79 and $114 with, and $141 and $193 without, maintenance; women, $56 and $81 with, and $98 and $159 without, maintenance. Deaf teachers obtain as the average minimum and maximum per month, for men, $105 and $131 with maintenance, and $149 and

$216 without; for women, $84 and $112 with, and $109 and $159 without. The only common factor is that men teachers are favored with a higher minimum and a higher maximum.

Also, if the practice in the composite school were to reflect the tendency among the schools studied, then the deaf members of its staff would receive the same pay consideration at least as do the hearing teachers.

Matrons and Supervisors.—The matron in the typical residential school would be a person possessing character, an understanding of how to deal with children, and a specialized knowledge of household economy. The average minimum salary for this position is $789 per year, and the average maximum is $883.

The prevalent pay for supervisors is a minimum between $401 and $500, and a maximum between $501 and $600 for the school year, the most called-for traits desired in this position being fair education, ability to control children, love for children, and character.

Despite differences in salary scales, social equality nevertheless prevails among members of the official family of the school.

The School Curriculum.—The academic course of study is not prescribed by law, nor is it modeled after that in use in the ordinary public schools. It covers a period of 12 years and its general aim is specific preparation for citizenship.

Pre-vocational work, under such names as primary woodwork, handicraft, sloyd, and construction work, is assigned as preliminary training before the regular trades are taken up. However, there is no particular method followed by which trades are chosen for pupils, although decision is most often made on the basis of the desire of parents, the aptitude of the pupil and the judgment of the school officials.

The educational value of the various trades, as well as conditions near the homes of pupils, determines which

ones are made part of the course of study. Correlation between manual training and academic work in one form or another is an establshed practice.

The efficiency of pupils in industrial work is judged simply by the quality of the work completed during the course, no set examinations being given.

Shop language is definitely striven for as part of the school work, the trades instructors themselves making special efforts for this purpose. Further, the trades teachers also consult the superintendent, principal, or instructors in the academic department with regard to the language principles pupils should use. And, finally, the trades departments are not managed with the aim of earning money, although members of the trades teaching staff attend to repair work about the buildings or grounds, aided by pupils who thereby obtain practical instruction.

In a general way at least, the average institution keeps a record of the occupations of pupils after the latter have left school.

Rhythm work has also become a systematic part of the school curriculum.

Similar provision is made for physical training, which, although regularly conducted in classes, does not follow any special method. The typical school also provides regularly organized sports, the chief of which are baseball, basket ball, football, tennis, and track and field for boys, and basket ball, tennis, volley ball, and indoor baseball for girls. For the younger pupils, the regular physical training emphasizes play, as well as the more systematic form of exercises. The director of physical education does not, however, include in his duties regular examinations of the children. A regular course in hygiene, for the upper grades at least, also finds a place in the school curriculum.

Moral training, another feature of the school work, is promoted by means of Sunday-school classes in the care of members of the school staff and by regular chapel

exercises conducted by manual spelling and signs and led by men instructors. Pupils otherwise do not go home for religious training on the Sabbath Day. Permission to attend outside sectarian services, when granted, applies only to certain denominations or to individual cases; it is not a general practice.

The average school makes provision for some kind of postgraduate work, usually to prepare those of its graduates who wish to enter college. The postgraduate work also often takes the form of added industrial training.

The outstanding fact, so far as textbooks are concerned, is that only in the study of language do teachers of the deaf make contributions to any extent; in fact in this subject the principal reliance is upon books prepared by instructors of the deaf. The most popular of these are the works of Croker, Jones and Pratt, of the New York City Day-School for the Deaf, Caroline Sweet, formerly of the Hartford School, J. Evelyn Willoughby, of the Clarke School, and Louise Upham, of the Pennsylvania Institution. In history also the most prominent textbook is one prepared by Grace M. Beattie, of the Colorado School, and in geography another book by Miss Beattie, and one by Margaret J. Stevenson, a former teacher of the deaf, are among those most used.

Methods of Instruction.—The method of instruction probably followed in the typical school—so far as the information from the survey reveals—is the so-called "combined method."

The method of instruction, however, is not rigidly set, for when a child does not make the expected progress under one plan of instruction he is transferred to a class under a different method. Nor is the typical school compelled by law to employ the method or methods it does.

The method of instruction during the history of the average school, moreover, has undergone change, the ten-

dency favoring a gradual elimination of signs as a classroom medium of instruction.

No definite method prevails in testing the results in speech and speech-reading. Neither is there a systematic or scientific method of testing the hearing of pupils—at least not at the time of the survey—such tests being nothing more than general examination by members of the staff to determine sound, vowel, word and sentence perception.

The typical school does not prohibit the use of manual spelling. The use of signs, although not prohibited, is more or less discouraged. Still, they are employed in chapel exercises, in plays, dramatic and literary entertainments, and by the children at play.

The special method of lip-reading adhered to is the Muller-Walle system.

School Policy.—The assignment of pupils by grades is a definite procedure carried out once a year, with further adjustments in individual cases when necessary. The basis for the grading, is the general average of progress in school work. Teachers and the departmental principal together decide upon promotions.

The average school resorts to the rotating plan of classes for the upper grades.

Failure to maintain satisfactory progress under oral instruction will lead to the transfer of a pupil from that department to manual classes. The practice of transferring a pupil from manual to oral classes also prevails, although it is not so readily indulged in, the chief reason for such a change being the likelihood that a child will progress by oral training.

According to the median practice, the average number of pupils in a class is 11, contingent upon the necessities of grading and the number of teachers the funds available make possible. It apparently is not the custom to favor oral classes particularly, for they are not smaller in size than manual classes.

A pupil begins his speech training upon entrance to the school, although writing as a part of the school work comes after the first efforts in speech. No set policy prevails with regard to the time when manual spelling is first taken up, convenience being the deciding factor.

Contact with other schools is maintained by means of athletic contests and visits by teachers.

The daily session plan in the composite school separates the academic from the industrial work, the former taking up the morning and the latter the afternoon. Saturday morning, however, is given over to industrial work. The time devoted on week days to school work as distinct from shop work is between 4½ and 4¾ hours, the period for recess deducted.

Pupils of all departments are assigned to industrial classes in the average school and, including the work of Saturday morning, 14½ hours as a rule are spent in these classes weekly.

Between 6½ and 7 hours of school work daily, including both academic and industrial classes, constitute the length of the school day, although for primary pupils the program is not so long, consisting of only 5 hours of work.

An hour of outside study after classes, under supervision, is the amount of preparation required for school work. Also, there is no specified time allotted for reading as part of the work outside the classroom, nor is systematic report made by the pupils on the outside reading.

Occasionally the average school returns to the public schools a pupil who has sufficient hearing and intelligence to progress among normal children. It is not the policy, however, to prepare pupils to enter high schools or colleges for hearing persons, but the average school does undertake to prepare those of its graduates who are candidates for admission to Gallaudet College, approximately 55 per cent of whom are successful.

The typical school also plans for the educational advancement of its teachers, a number of educational periodicals being furnished, chief of which are the *American Annals of the Deaf,* the *Volta Review,* and the *Normal Instructor and Primary Plans.*

Membership in an educational organization does not seem to be considered very important, giving evidence thereby of a decided lack of professional spirit. A partial explanation may be found in the fact that the typical school does not help defray the expenses of teachers to meetings of professional organizations. Of the major societies of educators of the deaf, the American Association to Promote the Teaching of Speech to the Deaf seems to be most favored, followed by the Convention of American Instructors of the Deaf, and the Society of Progressive Oral Advocates.

It must be said, though, that the average school does take steps, exclusive of teachers' meetings, to promote professional growth on the part of its instructors by encouraging visits to other schools, special outside study, attendance at lectures, or summer school work. In general, however, teachers who take up summer study do not on that account alone earn special promotion.

Teachers' meetings also are held once a month, serving by lectures, papers, discussions and demonstrations to better correlate the work and generally provide an incentive for improvement.

But a decided point of complaint with the average school, is that it does not maintain a course of teacher training, leaving the matter of how skilled teachers of the deaf are to be obtained open to speculation.

Library.—The ordinary school library probably does not contain more than 4,000 volumes. A part-time librarian, with an average compensation of $287 for her library duties during the school year, has charge of the books, although additional volumes are added, as a rule, upon suggestion of the teachers. Despite the fact that

regular reading is prescribed as a part of the course of study for the intermediate and advanced grades, at least, instruction in the use of the library may or may not be given. However, the library itself is accessible practically all of the school day, a definite catalogue system being employed. The school library also has no connection with city or state libraries. Additions to it during the year preceding the survey did not exceed 100 volumes, and as an average a sum of approximately $300 is spent yearly for additional books.

Extra Schoolroom Activities.—The typical school provides for its pupils a program of play and sport after school hours similar to that enjoyed by hearing children. Practically 2 hours a day, with additional time at the week end, are devoted to this purpose, playground equipment and apparatus being furnished. A literary society, conducted under the direction of teacher, principal or supervisor, and occasional dramatic entertainments afford opportunity for self-expression and amusement. Parties, picnics, clubs, and social gatherings aid in developing the social personality. A motion-picture machine, addresses and sermons by prominent visitors, special lectures and travel talks add to the program of entertainment and instruction during the time outside school hours.

Athletic contests are entered into with outside teams, the necessary arrangements being attended to by the director of athletics.

Pupils also are taken on visits to points of historical interest, industrial plants, markets, and stores.

Christian Endeavor Societies are the most prominent of the religious organizations of the school, the meetings being conducted by the pupils with the aid of teachers.

Custodial Care.—The average span of the complete active day in the ordinary school seems to be 15¼ hours, although for the younger children this time is shorter. The rising hour is 6 a. m.

The younger children are constantly in the care of an employee.

The older boys as a rule enjoy the privilege of leaving the grounds of the institution alone freely or at stated times; girls must either be accompanied by a chaperon or else receive special permission.

The general rule with regard to discipline is to place responsibility with the person who is in immediate charge, only serious matters being referred to the superintendent.

The supervisor, whose principal duty is the care of the pupils during after-school hours, is not especially trained for his work.

Clothing of the children is supplied by the parents, but in indigent cases, the home county provides it.

Relations With Home.—Parent-teachers' meetings are not fostered by the typical school. A monthly report seems to be the method employed to acquaint parents or guardian with the progress made by pupils. The children are permitted to go home for long holidays and, if they live within convenient distance, on week ends also. Parents, on the other hand, may visit the school as often as they desire; in fact, they are encouraged to do so.

Pupils are encouraged to speak when they are at home. They are also required to write home at least every two weeks, on which occasions their letters are corrected, but not censored, except in unusual cases.

The typical school has not yet advanced to the stage where it can employ a field agent or social worker who keeps in touch with home conditions.

School Records.—An application blank filled out by parents or guardian furnishes the vital statistics for the school authorities regarding pupils, fairly thorough data on personal history, condition—mental and physical—at time of application for admission, and parentage.

A permanent individual card system serves to record the school history of each pupil, both in and out of the

classroom. A health record of some kind, possibly no more than a height and weight record, is also kept.

The average length of school life, according to information derived from school records, appears to be from 8 to 10 years. The principal causes inducing pupils to leave school before the completion of their course are a desire to earn money, a natural inability to continue with the school work, and the need of help at home. The percentage of the total pupil enrollment leaving before completing the course lies between 80 and 90, an unnaturally large proportion. Nor is any record kept of the activities of pupils after they have left.

Occupations of Graduates.—The 5 most popular vocations that graduates enter are printing, carpentry, farming, shoe repairing, and dressmaking. As a rule graduates enter the trades learned at school—that is, if the opportunity presents itself—the proportion that actually do so being possibly between 50 and 60 per cent. A further statement of the number of graduates who remain in the trades which they have learned at school is at best an uncertain estimate, as the average school is more or less delinquent in following up this question.

The trades selected for the school curriculum are those that seem best adapted to the ability of the deaf, or that meet the conditions in the state or near the homes of pupils, or that offer a sure means of livelihood, or that possess an educational value.

In the average school, no special efforts, other than letters of recommendation, are made to place graduates in desirable positions. The earning power of graduates varies as a minimum from $10 to $20 a week, and as a maximum from $35 to $75 a week.

Publicity.—The standard means of acquainting outsiders, particularly the parents of pupils, with the activities of the school is the paper published in the school print shop. The superintendent assumes responsibility for what is published in the journal, although it may be

that another official of the school, probably a teacher, is the active editor. This paper reaches the homes of practically all of the pupils, and in addition goes to libraries or state and city bureaus.

The average school also takes part in exhibitions or fairs, and joins in community projects such as relief drives, pageants, drills, parades or carnivals. Demonstrations of school work before civic organizations, feature articles in newspapers, booklets and pictures, or circular letters sent to those who may be or should be interested—all are expressions of the desire to make known to the public the type of work accomplished by a school for the deaf.

PHYSICAL ASPECTS OF THE COMPOSITE SCHOOL

It remains to complete the picture of the composite school in its physical characteristics, again relying upon the average tendency in the schools studied.

Location.—The typical American residential school for the deaf has an urban location, accessible by rail and trolley, and centrally situated.

Grounds.—The extent of its grounds is approximately 110 acres, part of which is given over to campus. The school garden takes up 3½ acres, and the athletic field about 4 acres. If funds were available, 67 acres could be used for farm purposes. Spare land could be set aside for pasture, woodland, orchard, or meadow. The grounds of the average school are both fit and adequate.

Buildings.—The typical school plant consists of about 9 buildings, of brick construction, varying in age, and kept in very good to excellent condition. The plan of grouping followed is that of the congregate or centralized system, mainly because such was the only type known at the time of erection, and because it was a matter of economy to adhere to the same plan in later additions to the plant.

Classrooms in the typical school are satisfactorily lighted and ventilated by means of open windows. The black-

boarding is made of slate, and enough of it is supplied to meet the needs of the school. The seats and desks are serviceable, but not all modern in type. Supplementary schoolroom material may include pictures, books, models, charts and maps. The typical school is also equipped with at least one piano to carry on auricular work.

Printing is emphasized as the most practical trade to teach deaf boys, the equipment of this department including at least one linotype machine and a fairly complete line of accessory material. A woodworking department is also maintained, properly equipped with machinery electrically driven. The typical school provides the necessary equipment for instruction in household arts for girls.

A gymnasium, with appropriate apparatus for both gymnastics and indoor sports, is part of the school plant. Special space is also provided for indoor play, usually a room either on the ground floor or in the basement, spacious, well lighted and well aired.

The space provided for dormitories is quite sufficient, and the equipment, on the whole, consisting of beds and chairs, and possibly some other kind of furnishing, is kept in excellent condition.

The kitchen proper in the average school answers satisfactorily the requirements of size, light, ventilation, and general convenience. Either coal or natural gas is depended upon for fuel, and steam is used for the preparation of food. The equipment is modern in character, with a fair amount of labor-saving devices, and in very good or excellent condition.

Medical Care.—The average school is prepared with the necessary facilities to care for all ordinary dental work. It is not equipped to treat troubles of the eyes, children in such cases being sent to an outside specialist who may be a member of the school medical staff. Ear examinations are attended to in the same manner. Nor is the typical school prepared to deal with surgical cases.

A non-resident physician, at a salary which is probably only nominal compensation, is engaged. In addition, for special cases, the school has at its service a staff that may include a dentist, an oculist, an aurist, a surgeon, or other specialists. It also regularly employs a trained nurse.

The average school is prepared with the necessary facilities to care for contagious cases as well as for ordinary hospital emergencies.

Pupils, on admission, are given a physical examination, but not at any other time during their school life. Vaccination against smallpox is required of all children, but there is no inoculation for typhoid. The Wassermann test is given only upon the advice of the school physician, usually in cases of suspicion. No other medical preventive measures is taken.

The hearing of pupils is tested at entrance only in a general way, that is, no attempt is made to carry out such tests either scientifically or systematically. Nor are such tests conducted at regular intervals during the school life of the pupils.

A weight chart is kept for use in connection with diet, the school physician recommending such changes as he deems necessary in the food of pupils who show a falling off in weight.

General sanitary conditions in the ordinary school are quite satisfactory, cleanliness especially being emphasized. City health regulations are complied with, assuring wholesome health conditions.

Food.—The average school bill of fare is prepared without the help of a trained dietician. However, an attempt is made to arrange a balanced ration.

The general food supply is bought in open market, and the milk obtained from a standard inspected dairy. The average school is not held to a designated limit in its expenditures for food.

It is not considered necessary in the ordinary school to

take the precaution of having a physician examine all hired help who handle the food.

The table fare is well prepared, carefully served, varied, abundant in quantity, and nourishing.

Fire Protection.—The average school, complying with public fire regulations, provides a satisfactory number of exits. These exits, however, are not well marked. The school also is equipped with a supply of fire hose and extinguishers, and a sufficient number of fire escapes which, however, are not lighted for night use.

The typical school maintains a fire alarm connection with the nearest city fire department. The water supply for a fire emergency is also obtained from the same city system. Fire drills are held, possibly once a month, without notice, but not at night.

Conclusion.—On the whole, a fairly satisfactory situation prevails in the average school with regard to general condition of the plant, the buildings with their equipment and furnishing, care of pupils, and general morale. Its great problem, considering its physical aspects, is to maintain the adequacy of the present plant and to provide for expansion along natural lines, which would call for necessary additions to the school plant.

It is not the purpose of the National Research Council in its conduct of the survey recently completed either to condemn or to praise any particular practice. It does aim to give a picture of the conditions as they exist. Conclusions rest with the reader.

CHAPTER VIII

PUBLIC DAY-SCHOOLS FOR THE DEAF AS SCHOOLS

Thirteen public day-schools for the deaf, with 1,243 pupils enrolled, were included in the survey undertaken by the National Research Council during the school year of 1924 to 1925. These were:

School	Number of Pupils Oct., 1924
Gough School for the Deaf, San Francisco, Cal.	41
Beidler School for the Deaf, Chicago, Ill.	110
A. G. Bell School for the Deaf, Chicago, Ill.	84
Parker Practice Day-School for the Deaf, Chicago, Ill.	125
Horace Mann School for the Deaf, Boston, Mass.	150
Minneapolis Day-School for the Deaf, Minneapolis, Minn.	69
St. Paul School for the Deaf, St. Paul, Minn.	22
Gallaudet School for the Deaf, St. Louis, Mo.	.....
Newark School for the Deaf, Newark, N. J.	83
Public School 47, Manhattan, New York, N. Y.	362
Alexander Graham Bell Oral School, Cleveland, Ohio	140
Portland Day-School for the Deaf, Portland, Ore.	30
Erie School for the Deaf, Erie, Pa.	27

According to the *American Annals of the Deaf* for January, 1925, there were 81 day-schools in the United States, with a total enrollment of 2,658 children, in October, 1924. Including as it does almost half the number of all pupils enrolled in such schools, the findings of this study may be taken as a fairly correct picture of the work of day-schools for the deaf in this country.

STATUS

The day-school for deaf children is assuming more and more an important part in the education of the deaf. A summary of the statistical data published annually in the *American Annals of the Deaf* will attest to the steady growth of this type of school during the last quarter of a century.

Year	Number of Pupils in All Schools in U. S.	Number of Pupils in Residential Schools	Number of Pupils in Day-Schools	Number of Pupils in Denominational and Private Schools	Per Cent of Total Who Are in Day-Schools
1900	10,608	9,504	708	396	6.67
1905	11,344	9,930	953	461	8.40
1910	12,332	10,478	1,394	460	11.30
1915	13,636	11,236	1,907	493	13.98
1920	13,653	10,944	2,014	695	14.75
1925	16,118	12,404	2,863	851	17.76

The table just given indicates clearly a trend toward the expansion of the work of the day-school at the expense of the other types of schools, public residential and denominational and private. From 6.67 per cent of the total number of pupils in all schools for the deaf in this country in 1900, the enrollment of day-schools had advanced to 17.76 per cent of the total in 1925.[1] The remarkable growth of the day-schools within the past 25 years may be seen in a most striking way by a comparison of actual numbers. In 1900 the number of pupils in public residential schools was 9,504, and 25 years later the enrollment was 12,404, a gain of 2,900. Beginning the same period with only 708 pupils, the day-schools showed a gain of 2,155 by 1925. This gradual encroachment upon the field once preempted by the older residential schools affords an interesting subject for further study. The question as to whether it will be coöperation or conflict with the older types of schools remains to be determined.

TYPE

All the day-schools studied are public schools—in each case an integral part of the city public school system. In keeping with this is the fact that these schools are also non-denominational in character. In 10 of the 13, there is apparently no restriction as to pupilage. In 2 of the

[1]This growth in the pupilage of day-schools is further accentuated in the statistics for 1926, when such schools enrolled 19.06 per cent of the total number of pupils in schools for the deaf in the United States, and for 1927, when the corresponding percentage was 19.36.

other 3 schools, the restriction aims to exclude those children who are "mentally deficient"; in the third, pupils must be between 4 and 21 years of age, and if they are not residents of the state they must pay tuition.

GENERAL MANAGEMENT

Eleven of the same 13 day-schools are under the general management of city boards of education. In the 2 remaining schools, the state board of education coöperates with the city board, in one case the state authority confining itself to deciding on doubtful admissions.

In no case is the governing authority, the city board of education, hampered by political obligations. The advantages accruing from this type of management, according to the answers given, is that the school for the deaf is thereby recognized as part of a great educational system, with the assurance that it will obtain the special attention it requires, and that it will serve those children with impaired hearing who otherwise would flounder about in the ordinary schools. Only one school reported a disadvantage in the existing form of management, namely, that the city board exhibited a "lack of specific knowledge" of the needs of a school for deaf children; the remedy suggested is that a board of interested citizens be chosen to make recommendations to the school committee, the principal of the school to meet with this board, but without power of vote.

MANAGING OFFICER

The directing officer in 8 of the 13 day-schools is the principal. In 3 of these the principal is appointed by the board of education, in 2 others by the board after examination by a city board of examiners, in 1 other case by the board of education after nomination by the superintendent of instruction, and in the remaining 2 schools by the superintendent of city schools.

In 2 cases—one case including 3 day-schools within the same city system—the managing officer is the director of

special classes, appointed in one case by the city board of education and in the other by the superintendent of schools. For one school the superintendent of city schools, appointed by the board of education, is reported as the chief executive officer.

Information regarding tenure of office of the managing officer was obtained for 10 of the day-schools. In 4 of these appointment is for life or for an indefinite period. In 2 others it becomes permanent after 3 years of satisfactory service, and in 1 case tenure is limited only by voluntary retirement at the age of 60 and compulsory retirement at the age of 70. In the 3 remaining schools, election of the principal is a yearly procedure.

In 5 cases, the managing officer is responsible to the city superintendent of schools, in 3 other instances to the board of education, in 1 case to the board of superintendents and board of education, and in still one other case to the superintendent of schools and school committee.

The managing officer in the day-school arrangement exercises no control over disbursement of funds; at least such is the condition in 11 of the 13 schools studied. In one of the two exceptions the principal prepares the budget but does not directly handle funds; in the other the chief executive officer, the director of special classes, makes recommendations regarding expenditures to the superintendent of schools.

In only 5 of the 13 schools considered, does the head of the school have a voice in the appointment of teachers, and then only indirectly in an advisory capacity; in one of them the principal may merely recommend; in another case the head of the school exercises the appointing power with the approval of the school board; and in the 3 other schools the director or principal in effect has the same power by process of recommendation within prescribed rules, such recommendation alone being considered by the appointing authority.

In only 2 of the 13 day-schools does the head of the

school have anything to do with the appointment of employes other than members of the teaching force. In one of them the person in charge recommends such individuals for selection to the superintendent of schools, and in the other the principal suggests the names of certain subordinate employees, who are then placed on civil service tenure.

Supervision of school work is included among the activities of the principal in all of the day-schools visited; in one of them, however, this duty is performed only "if time permits." At the time of the survey, in 7 of the 13 day-schools the head of the school had no assistant for supervision of classroom work, but for one of them such assistance was contemplated for the following year. In one of the other schools, an assistant served only for supervision in special subjects. Aside from clerical help, in none of the day-schools does the managing officer have a responsible business assistant.

In only 4 instances did the head of the school express an opinion regarding the ideal way of appointing the managing officer of such schools, 3 of them approving of the existing system in their own schools, these being, in turn (a) choice by the city board of examiners after written and oral examination and after the candidate has given indication of eligibility to meet the requirements of the position; (b) by the city board of education on examination by board of examiners; (c) nomination by superintendent of instruction and appointment by board of education. In the remaining case the principal suggests that the head of the school should be appointed by the superintendent of schools without civil service restrictions if he has knowledge of the situation. Four out of 5 principals making a statement declare that the length of term of appointment should depend upon the efficiency of the incumbent; the other expresses satisfaction with the plan in effect in her own school by which appointment becomes permanent after 3 years of satisfactory service. The responsibilities of the principal, according to the few

opinions given, should embrace oversight of the general organization of the school, discipline, and supervision of instruction.

FINANCIAL SUPPORT

According to the information obtained, the day-schools included in this study derive their financial support from public appropriation and, with one exception, on an annual basis. This appropriation in the case of 6 of the 13 schools is determined by a fixed percentage of public tax for the support of the school system to which each day-school belongs. In one other case the financial support depends upon a fixed percentage of tax from city and state; further, in accordance with a recent enactment, the same state is to grant special appropriation for the training of handicapped children.

One day-school enjoys the benefit of three endowment funds—established by bequest—totaling altogether $8,400, from which an annual income of $317 is derived. The latter sum, according to stipulation, is used at the discretion of the principal, with the approval of the assistant superintendent of schools, to promote acquisition of language or to benefit the school.

A budget system governs the handling of funds in 7 of the day-schools studied. No answer regarding this was obtained for the other 6 schools.

Pupils resident in the same city who are able to pay may be charged for tuition in only 2 of the 13 day-schools, a situation which emphasizes the public character of such schools. In one of the 2 exceptions, moreover, provision for tuition charge when there is ability to pay, is a nominal one; actually it is not carried out. Only one of the 13 day-schools is not permitted to accept children from outside the city, even if they are willing to pay for tuition; in the remaining school such pupils are accepted when tuition is paid for. Pay pupils in day-schools, however, according to the answers received, are a rarity. In such cases, the rates per year for the 8 schools giving informa-

tion are, respectively, $87.75; $150 (for 4 schools, 3 of which belong to the same city system); $200; $250, and $260. For 2 other schools no definite rate has ever been established.

For only 4 schools was any information obtainable regarding the annual per capita allowance per pupil. For 2 of these—both in the same state—there is an allowance of $250 per pupil. This money is used for teachers' salaries, lunches and street-car fare when parents cannot afford it. The city in each case furnishes building, janitor service, heat and all supplies. An additional appropriation of $150 is made for each pupil from the same state who comes from a locality where there is no school for the deaf, this sum being used for board and room. In another day-school the per capita allowance is determined each year on a basis of the previous year's expenses, the probable number of pupils for the coming year, and the number of teachers needed. On this basis, the annual allowance for the few years immediately preceding the survey was between $300 and $329. In the one other school giving information, the state furnishes "a certain proportion" and the city board of education the balance of what it considers necessary for per capita support.

The principal of the ordinary day-school is apparently not troubled with the problems of financial management that beset the head of a residential school. The day-school may consist of only a few classes in a building in common with one of the regular elementary schools, and with the latter may form a unit in a larger city educational system, in which case its financial needs are attended to by the central authority. This also may help to explain why so little direct information concerning the finances of the day-school was available.

Only 4 of the 13 day-schools indicated the total per capita cost for the last fiscal period preceding the survey. These were, in order, $228, $240, $363 and approximately $375—the average being $301. This may be contrasted

with the average per capita cost of $517 covering the year 1923-1924 for the 26 residential schools giving information.

Two of the day-schools state the per cent of the total expenditures required for the upkeep of plant, these being 11.99 in one and 20 in the other. The average of the percentages of total expenditures for upkeep of plant and buildings in residential schools was 11, twenty-seven such schools being considered. Further, for 19 of the 27 residential schools this percentage was lower than that in either of the 2 day-schools here given.

Three of the 13 day-schools furnished information on the per cent of total expenses for salaries of academic teachers, these being in order, 83.01, 85.7 and 90.5—with an average per cent of 86.4. The corresponding average for 27 residential schools was 27.2 per cent, the highest such percentage among the latter group of schools being 50, and the lowest 15.8.

For one day-school the percentage of the total expenses devoted to school equipment was 4.4, and for library purposes 0.6. These were the only figures on these items obtained for the day-school group.

Only fragmentary information was given in answer to the questions concerning the expansion of these schools in their financial needs. In one case, the per capita cost in the year 1914-1915 was $169.82; for the year 1918-1919 it fell to $156.21, and for 1923-1924 it rose to $239.97, a total increase of 41 per cent over the ten-year period. In another case the figures stand as a composite for 3 day-schools, all part of the same city school system. Here the per capita cost during the school year 1914-1915 was $126.30; for 1918-1919 it was $204.28; and for 1923-1924 it was $371.99, a total increase of 195 per cent, higher than the increase for any of the residential schools studied.

In the first of these schools, also, the total expenditures increased 48 per cent during the ten-year period from 1914 to 1924, a figure greater than that for 12 of the 24 residential schools giving complete information. In the

second case, again representing 3 day-schools in the same city, total expenditures increased 223 per cent over the same period, an increase surpassed by only one of the residential schools in the survey.

Expenditures for salaries increased 47 per cent in the one case again for the same decade, and in the other, 225 per cent, the latter being higher than in any of the residential schools, and the former more than the corresponding increase in only 4 of the 23 residential schools giving data on this.

SCHOOL ADMINISTRATION

Members of the teaching staff in all of the 10 day-schools giving information are governed through the principal of the school in agreement with city rules and regulations, although in one case directions come from the city superintendent of instruction in regard to certain matters.

Parents of pupils are kept in touch with the work of the school by the principal and the teachers in 7 of the 11 schools giving information. In the other 4, this is done by the principal alone. In 6 of the same schools, the pupils are governed directly through teachers and officers; in 2 other cases by the superintendent of schools and the teachers; in 1 case by the principal and the teachers in accordance with city school regulations; in another, by the principal and teachers, and in the last case by the principal, the teachers being consulted.

The day-schools themselves do not directly conduct business matters, such as purchasing, etc. Such transactions are made through the office of the disbursing agent or business manager of the central board of education.

A summary of the information obtained may make clear the general accounting methods that prevail for such schools.

School A—All business is transacted by the board of education through the business manager's office and the secretary's office.

School B—The budget is prepared by the school principal, who also makes out orders for supplies which are filled by the bureau of supplies for city schools.

School C—The budget is allowed in August for the following calendar year. Requisitions are made by the principal, passed on by the director of special classes, and allowed by the superintendent of schools. Purchases are made by the city purchasing agent, and items are charged to the budget.

School D—The principal renders payrolls monthly for teachers and attendants. Supplies are obtained through requisition by the principal on an annual allowance. All general expenses, such as city supervision, physical training, etc., are charged *pro rata* against the school. Repairs and furniture are under the supervision of the city schoolhouse commission.

Pupils in day-schools are furnished with free school supplies, which include textbooks and writing and art materials. In 3 of the 13 day-schools studied, street-car fare is also provided, although in one of them only for those children who cannot afford this expense.

LEGAL STATUS

Only 2 of the 13 day-schools gave information regarding the appointment of the governing board. In one case it is by the city mayor, and in the other the school committee is elected by popular vote.

How the head of the school is chosen has already been discussed.

The methods of appointing teachers in day-schools may be illustrated by the following plans, each effective in a different school:

(a) By the board of education;

(b) From an eligible list in order of standing;

(c) By the superintendent of public schools following conference with the director of special classes after the latter has consulted the principal of the school.

Admission of Pupils.—Of 9 schools for which a report was given, 5 of them (3 in the same city system) maintain an age limit relative to admission of pupils, between 4 and 21 years. In the others it varies as follows: From 4 years and up; from 4½ years and over; between 5 and 21 years; from 5½ years up to any age.

As regards the type of children admitted, the day-schools agree generally that only those children who are deaf or so hard of hearing as to be unable to continue in the regular public schools and who are of "teachable mentality" are considered.

In the day-school arrangement the tendency apparently is to set no limit by law to the length of schooling permitted. In only 2 of the 13 schools examined is such a limit stated, namely, "to 21 years of age" (the permitted age of admission here being 4 and 5, respectively); in 2 others it is "ten years with unlimited addition on recommendation of principal," and "twelve years, or as long as expedient," respectively. Neither is there any distinction as to race or color in any of these schools.

Feeble-minded deaf children are specifically excluded from the day-schools, no provision otherwise being made for their training.

Authority to accept or decline pupils for admission, in 2 of the 8 schools reporting, rests with the school board; in 2 cases with the principal; in 2 others with the principal and the person in charge of special classes conducted by the city system; in 1 by the "director of hygiene," and in another by the "child study department and director of special classes."

In no case is the day-school legally considered a charitable institution. In none of the 13 day-schools, also, does the name include either the word "dumb" or "asylum."

For 8 of the 13 schools studied, there exist compulsory school laws for deaf children. In 1 other case, such a condition applies theoretically, but with this qualification, according to the report given in the questionnaire:

The law says that all children under 16 years of age who have not completed the sixth grade, and all children under 14, irrespective of grade, must attend school, and no physical defect rendering the child a fit subject for a special school shall constitute a valid reason for non-attendance, if the special school exists.

But the law does not say the child must attend the special school; therefore, attendance at *any* school clears the law.

For at least 7 of the 13 day-schools public officials must notify the school authorities of children who ought to enter the day-school for the deaf, in one of them through the school census and in another through the bureau of attendance.

In 9 of the 13 schools no particular method of instruction is prescribed by law. In 3 of the others the oral method is compulsory, and in one, the "combined" method.

TEACHING FORCE

Academic Teachers.—There seems to be no uniformity in the general qualifications required of academic teachers in day-schools for the deaf. The different requirements as they prevail in the schools studied may be summarized as follows:

1. A high school and normal school diploma and special normal training for teaching the deaf.
2. A normal school diploma, 1 year of special training to teach the deaf, and 2 years of experience in a school for the deaf.
3. A high school and normal school diploma, special training and 2 years of experience.
4. A high school diploma and satisfactory special training, or a normal school diploma, or a regular city certificate for the day-school for the deaf.
5. Two years beyond the high school and a course in special training.
6. Same qualifications demanded of all elementary teachers.
7. Same as in 6, plus special training.
8. Equivalent of high school course, 1 year of special training, 1 year of ordinary teaching experience, and 2 years of teaching the deaf; or the holding of the elementary public school teacher's or kindergarten license, 3 years of experience in the elementary school and 1 year of special training.
9. Graduation from high school and 2 years of special training in a school for the deaf.
10. An "accredited certificate" from the state.

A review of the above requirements indicates general agreement on some points at least, namely a high school

and normal school course and special training to teach the deaf. In two or three cases the standard falls below this; in an equal number it may be said to be above it.

The staffs in the day-schools are composed practically entirely of women. Further, only a negligible proportion of the teachers are deaf persons. This may be contrasted with the situation in the residential schools where, including the industrial teachers, approximately one out of every five instructors is a man, and one out of every six a deaf person.

Industrial Teachers.—In some of the day-schools the manual training work is done in the shops of regular elementary school centers, under conditions standardized by the public school system. In those day-schools which give trades teaching, the qualifications demanded of instructors follow one or another of the following rules:

1. A rating and appointment according to city requirements.
2. Satisfactory general education, satisfactory training in special field, and three years' experience in teaching the special subjects.
3. High school and normal school diploma and special training for vocational work.
4. Graduation from high school and a two years' industrial course.

Salaries.—Owing to the absence of the maintenance feature, the study of the salary question in the day-schools is not so complicated as it is when dealing with residential schools.

An idea of the schedules that prevail in the day-schools may be obtained from the following summary, which gives figures for the schools making a report, on an annual basis of ten months' service.

A—Principal

Minimum	Maximum	Annual Increase	Years to Reach Maximum
$3,750	$4,750	$250	4
3,708	4,284	144	4
2,800	4,000	200	14
2,500	3,500	200	—
1,750	2,750	——	10
——	2,660	——	7
1,200	2,150	100	11

B—Assistant Principal

Minimum	Maximum	Annual Increase	Years to Reach Maximum
$3,400	$3,600	$100	2
2,340	2,628	96	8

C—Women Teachers*

Minimum	Maximum	Annual Increase	Years to Reach Maximum
$1,900	$3,250	$150	10
1,700	2,700	100	—
1,200	2,700	100-150	14
1,675	2,675	125	9
1,476	2,244	96	8
1,300	2,100	100	9
——	2,100	——	7
1,100	2,050	100	11
1,350	2,000	**	11
1,200-1,300	1,700-1,800	100†	10

*In the rare case where a male teacher is employed, the salary is the same as that for women.

**At the end of the first year, $100; thereafter, $50 each year.

†Increase begins after the fifth year.

D—Men Teachers—Industrial

Minimum	Maximum	Annual Increase	Years to Reach Maximum
$1,900	$3,250	$150	10
1,725	2,725	125	10
2,148	2,580	96	8

E—Women Teachers—Industrial

Minimum	Maximum	Annual Increase	Years to Reach Maximum
$1,900	$3,250	$150	10
1,675	2,675	125	9
1,200	2,000	96	8

F—Men Teachers—Physical Training

Minimum	Maximum	Annual Increase	Years to Reach Maximum
$2,000	$3,000	$100	—
1,725	2,725	125	9

G—Women Teachers—Physical Training

Minimum	Maximum	Annual Increase	Years to Reach Maximum
$2,000	$3,000	$100	—
1,476	2,244	96	8

Note: The annual increase in some instances does not begin at the end of the first year, nor is it always a uniform increase.

An attractive feature of the day-school plan is the provision for some form of pension retirement for teach-

ers. This benefit accrues probably from the fact that these schools are units in their respective city school systems. Only 3 of the schools studied are without this advantage.

The day-schools, since they are not concerned with the problems of custodial care outside of school hours, have no matron or supervisor question in the same sense that the residential schools do.

One day-school reports that a matron, an attendant and two escorts are employed. The matron has a civil service rating obtained by examination; the other three are on the civil service labor list for which registration only is required. The matron receives a salary of $18.50 a week, the attendant is paid $3 for each day of actual service and the escorts $1.50 for each day of actual service. The escorts do not spend the day at the school, but simply accompany pupils to and from central points.

SCHOOL CURRICULUM

Academic Course.—In only 1 of the 13 day-schools is the academic course of study prescribed by law, although in another it is partially so. In 7 of them, also, the course of study is based on the public school course, and in 2 others "as far as possible." In one it follows the public school model, with the necessary adaptations, above the third grade. In the 3 other schools—all of the same city—the course is in part the same as that for hearing children.

Of 12 schools giving answer, in 3 the course covers 8 years of work; in 3 others it coincides with the ordinary eight grades of elementary public school work; in 1 it lasts 10 years exclusive of the kindergarten; in 2 it is 11 years; in 2 others it is 12 years, and in 1 it is 13 years.

With one exception, the course in these schools provides specific training for citizenship.

The matter of tests brings out a special advantage

enjoyed by the day-schools. Many of the larger public school systems consider it worth while to establish a psycho-educational department, and as the day-school for the deaf falls within special classification, it may thus obtain for its pupils the help of experts in the field of mental guidance. Most of the day-schools in this study report that special psychological tests are used with their children, often for exceptional or doubtful cases. In one group of 3 schools—all in the same city—these tests are conducted by the child study department of city schools, in another by the city mental clinic, in another by the medical inspector of special classes, and in others by city school psychologists.

Manual Training.—Eight of the 13 day-schools provide preliminary training for younger children as part of the course in manual training. This may take such forms as cardboard construction, sloyd work, industrial handwork in drawing courses, modeling, raffia work, paper cutting, and weaving. Most of this work, however, is in the nature of pre-vocational hand training. As a matter of fact, only 2 of the 13 day-schools actually do trades teaching. In the first of these a particular trade is chosen by a pupil after conference with parents and teachers; in the other this is determined by the ability and preference shown by the pupil, the teacher's opinion and the possibility of obtaining employment later. The function of the day-school with respect to trades teaching may be summarized in this statement:

> **We do not undertake vocational training, but the work naturally features the fundamentals of vocational guidance. Simple mechanical principles are given. No trade instruction is possible in the limited time devoted to the work.**

In each of the 2 instances where industrial training is given, the trades are selected at least partly for their educational value as well as for the relation of the trades to conditions near home. The work of the term in the one case is graded each month on report cards which are

presented to the parents, this acting as a check-up of the progress made. In the second school, the efficiency in trades work is judged from the work completed and the time taken to do it.

There seems to be no evidence that manual training is correlated with the academic work to any great degree. In one of the day-schools this correlation is carried out "to a certain extent"; in another, by means of language exercises and drawing work; in a third school, with language, arithmetic and geography; and in still another, the classroom teachers introduce manual training projects in their work. One school, also, follows the plan of correlation "as in the regular day-schools of the system" (presumably the public schools of the same city).

Shop language, including that related to manual training, is taught in at least 7 of the 13 day-schools, by both shop and classroom teachers, although in only a few of these do the trades teachers confer with the principal or other teachers as to language principles.

In only 1 day-school, and that only to a limited extent, is the trade work a "money earner"; in the same school, also, both the trades teachers and pupils do repair work about the building.

Only 4 of the 13 day-schools attempt to keep a record of occupations of pupils after the latter leave school, and in these it is not a complete follow-up.

Physical Training.—All but one of the day-schools studied have the benefit of a systematic course of physical training, conducted on the plan in effect in the respective city school systems.

In 6 of the 13 day-schools, the pupils engage in regularly organized sports, which may include football, baseball, basket-ball, athletics, volley ball or soccer for boys, and supervised games for the girls.

The physical director in 5 of these schools makes regular tests; in 2 of them monthly; in 1, three or four times a term; in another, twice a year; and in the last, at varying

periods. In practically all of the schools the regular physical training for the smaller children includes, in one form or another, games, exercises appropriate to the age, rhythm work, dancing, and posture work.

All but two of the 13 day-schools report giving regular training in hygiene, this being looked after by the classroom teacher (in one case the school nurse assisting). In 6 of these schools, all the grades receive this training; in 3 others, only the upper classes; and in one, those from the second year up. The work may cover instruction and demonstration in health habits, daily inspection for cleanliness, and lessons in sanitation.

Moral Training.—Only 4 of the 13 day-schools include moral or ethical training as part of the course. In one, this consists of Bible reading; in another, the principal gives morning talks, but a course of moral and ethical training to be issued by the city for all its schools was to be adopted; in the third school, it is attention to right living; and in the last, it is ethical training in general.

Sunday school classes are conducted in only 1 of the day-schools, by the teachers, on a week-day afternoon after school hours and outside the school building. Only 1 school also, has regular chapel exercises, conducted in speech by either the principal or a teacher. In one other school, selections from the Bible are read at morning assembly, during which the principal presides.

Because of the nature of the day-school, its pupils attend the services of their own churches with their own families.

Postgraduate Work.—Three of the day-schools state that they offer postgraduate work. In one, this consists of advanced study equivalent in part to high school work. Another occasionally gives junior high school work to promising pupils. In the third, a child sometimes returns for some special instruction or for further trade work, often because he is too young to go to work; in this

school, at the time of the survey some children were coming back one day a week for continuation school work.

Textbooks.—The manner in which textbooks are decided upon, in 5 of the day-schools, follows a more or less elastic procedure. The board of education as a rule furnishes a catalogue of all titles used in the city schools, and from that list the day-school may order whatever books it desires, and in addition may call for such other books, perhaps prepared especially for the deaf, as it feels necessary.

In some cases all the work for the lower grades is made out and hektographed by the teacher, this method serving until textbooks are introduced. The main dependence, just as it is with the residential schools, is upon works prepared by teachers of the deaf when such books are available.

Only 10 of the 13 day-schools gave names of the textbooks used, and within each class the information was fragmentary. The data obtained is summarized in the lists given below, the figure after each title indicating the number of schools reported as having adopted it. The books starred are those prepared by instructors of the deaf. Only books used in at least two schools are here listed.

For language work, the main reliance falls upon the following books:

*Croker, Jones and Pratt, "Language Stories and Drills"	9
*Sweet, "First Lessons in English"	7
*Upham, "Question Book for Second Year Classes"	7
*Upham, "Language Drill Stories"	6
*Upham, "Beginner's Book"	5
*Upham, "What People Do"	5
*Willoughby, "Direct and Indirect Quotations"	3
*Northampton, "Reading Charts"	3
McFadden, "Language Series"	2

It is to be noted that in the list just given, all but the last are the work of teachers of the deaf.

In arithmetic only the following books were named more

than once, and only one of them was prepared especially for the deaf:

Hoyt and Peet, "First Year in Number"	4
*Kent, "A Manual of Arithmetic"	2
Hall, "Arithmetic for Primary Grades"	2
Wentworth and Smith, "Complete Arithmetic"	2
Thorndike, "Arithmetic"	2

In history the books emphasized more than others were:

Gordy, "Stories of American History"	4
*Beattie, "Story of America for Little Americans"	3
Woodburn and Moran, "Introduction to American History"	2
Barnes, "Elementary History of the United States"	2
Gordy, "History of the United States"	2
Montgomery, "Beginner's American History"	2
Montgomery, "Leading Facts of American History"	2

Of the textbooks in geography only the following were reported more than once:

*Beattie, "First Lessons in Geography"	5
Tarr and McMurry, "New Geographies"	3
*Stevenson, "Primary Geography"	2
Frye, "First Book in Geography"	2
Brigham and McFarlane, "Essentials of Geography"	2

The few books that were named as used in civics, physics, trades teaching, etc., were too widely scattered to permit the making of standard lists in these subjects, and so are not here recorded.

LIBRARY PROVISION

Day-schools for the deaf, apparently, do not provide formal library facilities for their pupils. Only 1 of 13 such schools considered has a separate library arrangement, and in that case the books are kept on shelves in the principal's office. In 2 schools, a bookcase in the head teacher's room serves the purpose of a library. In 5 schools the individual classrooms are supplied with sets of books that may be used for supplementary reading.

As a general rule, however, library use in the day-schools depends upon contact with city public libraries. In at least 9 of the 13 schools, sets of books are obtained from such sources, under varying arrangements, for use by the children either in the classrooms or at home. To illustrate the practice, in one case the public library will upon request send out 50 books which are selected by the

teacher and which may be kept a year; in another case, collections of all kinds of materials and books may be obtained from the city educational museum where 63,000 books are available, it being possible to hold books 5 weeks and collections 1 week. For another school the city public library makes up special sets, of 100 volumes each, for classroom use. In addition, the lack of formal library provision within the school induces the teachers to encourage pupils to make regular use of the public libraries.

A report of the number of bound volumes comprising their library accommodation was made by only 5 schools. In these the figures were (1) 2,225; (2) 859, plus 86 pamphlets; (3) 761, plus 190 pamphlets; (4) 500; and (5) 100.

Selection of the books, whether for school or classroom libraries or from the city public library, rests with the teachers and the principal in 5 schools, in 3 others the teachers themselves attend to this, and in 1 case it is the principal. The remaining schools gave no information on this point.

In none of the day-schools studied is a librarian regularly employed, either for part or full time. Only 3 of the 13 schools state that they give their pupils regular instruction in the use of the library, and in only one of these is a definite library period maintained, this consisting of approximately half an hour once a week when the children go to the public library.

In 4 of the day-schools studied, required reading is a part of the course for the upper grades at least.

CUSTODIAL CARE

As implied by its name, the day-school for deaf children is not concerned with the problems of custodial care that confront the residential schools. Only a few of them gave answer to the questions on this topic, and this information may be summarized as follows:

School A.—Attendants meet the young pupils at central points and escort them to school, returning them to the same points or more convenient ones at the close of the season. The organizing of this service is one of the most exacting tasks of the principal.

School B.—A teacher is on duty with the children in the lunch room and on the playground. Questions of discipline are attended to by the teachers and the principal.

School C.—The children have 1 hour a day for sports and recreation, and they are always in the care of an employee of the school. During the school day, pupils have no privileges as to leaving the grounds alone. The school supervisors are given regular training in their duties. The teachers and the principal settle all matters of discipline.

SCHOOL RECORDS

Five of the 13 day-schools obtain from the parents of the pupils whatever vital statistics deemed necessary for the school records. One other school obtains the same information through the physician and nurse of the hygiene department of the city school system, and still another from the parents, the board of health, and the visiting teacher.

In 6 cases, the school keeps a record of the racial descent of pupils; in another school this is done only partially, and in one other school only occasionally for special statistical purposes.

Eight of the schools ventured a statement as to the average length of school life as disclosed by the school records, and in these there is great divergence; the lowest being 4.3 years and the highest, 10 to 12 years. Between these extremes the figures were 5½, 9, "probably about 10 years," 10, "probably 11," and 8 to 12 years, respectively.

Most of the day-schools studied, 10 of the 13, fail to keep any records of the after-school life of their pupils, and in the others the effort is more or less unsuccessful. One of these schools, however, planned to institute such a system.

Pupils who leave school before graduation are often compelled to do so because of economic pressure at home, this being the reason most often given. Lack of ability to keep up with the work of the school is apparently the next most frequent cause. Other factors that result in the loss of pupils before they complete the school course are the moving of the pupils' families outside the city, and poor health. One large day-school reports that the

number who leave is growing less each year, first because graduation is held as the goal, and secondly because the state law requires children to be 15 years old and have graduated, or 16 years of age if the school course is not completed, before they may become wage earners.

Only 5 day-schools make a statement as to the percentage of pupils who leave before graduating; in these, it is 9, "about 12," 63, 74, and 85 per cent, respectively. One of these same schools also elaborates with a most interesting analysis of its records of the five years preceding the survey, as follows:

Graduated	37 per cent
To other schools	20 per cent
To work	11 per cent

Those going to work must either be 14 years old and have completed Grade VI of the public schools, or must be 16 years of age. The 32 per cent unaccounted for are largely floaters, children tried for a brief time and found unfit for a school for the deaf; or else girls who leave to stay at home.

METHODS OF INSTRUCTION

The method of instruction depended upon in day-schools seems to be overwhelmingly oral, 12 of the 13 under study reporting to that effect. Six of the same 12 also employ the auricular method when that is deemed practical. Further, these schools have been oral schools since their organization. One day-school relies upon oral, manual, and combined methods of instruction; in the same school a child may change from one to another of these methods when in the judgment of the teacher such a change would prove beneficial. In this last school, also, an oral department was started the year of the survey to meet conditions more adequately.

For only 4 of the 13 day-schools is the method of instruction prescribed by law; in another case the rule of the board of education prevails. In still another instance, the school was originally established as an oral school, although the principal states she cannot find the method mentioned in the law.

Nine of the 13 day-schools include rhythm work as a regular part of the curriculum, and 3 others do so

more or less irregularly. The time given to this varies; in 2 cases it amounts to an average of 15 minutes daily, in 1 it is 20 minutes and in another, half an hour daily. In 5 other schools the answers were "daily period," "40 minutes a week," "30 minutes a week," "varies in different grades," and "no set time," respectively. In 4 of the schools all the pupils are given this training, and in another all the pupils "at some time." One school includes only the first year's class for this work, and in 3 others the numbers vary.

No set tests are used to measure the results in speech teaching and lip-reading. The various methods employed are as follows: "Informal tests by principal and teachers," "reading and dictation tests," "daily work," "ability of teachers and others to understand, and lip-reading exercises," "teacher sits without looking at pupil and tries to understand what he says; pupils recite in assembly; a teacher other than his own tries to understand him; once a week teachers change classes and give lip-reading to pupils other than their own," "daily tests by teacher in classroom," and "use."

As a rule the hearing of pupils is tested in the school by the human voice, sometimes with the help of the piano. The general educational progress of the pupils is determined by both oral and written tests, which in some cases are periodic examinations. In one school the tests are the regular city and state examinations. One school also relies upon standard achievement tests.

Eight of the 13 day-schools endeavor to put pupils back into the schools for normal children when this is feasible. Another school "coöperates" with the hearing grades. One of the remaining schools answers the same question in the affirmative, but adds "but this is not our primary aim; the education of the individual comes first." One school states definitely, "No. They need more individual attention than can be given in our large schools."

All but 2 of the day-schools studied prohibit the use of manual spelling in the school, and in one of the 2 ex-

ceptions it is not a question at issue because no one at the school is acquainted with it. The general sentiment is that this means of communication is inconsistent with effective oral instruction.

In 8 of the 13 schools, writing is taught from the beginning of the child's schooling. In another school the teaching of writing is delayed only if the pupil is under six years of age. In the 4 schools which ban writing during the initial stages of the school work, the aim is to concentrate entirely upon the development of speech habits. In one of this latter group of schools, the sequence consists of speech-reading, speech, reading, the written and printed form, and then writing.

In at least 6 of the day-schools under study, the use of signs is definitely prohibited in classroom, in chapel or assembly, in play, in dramatics, or in literary entertainments. In 4 other schools, the same policy is adhered to, although the children use "natural gestures" in their play. In 2 schools, also, an effort is made to bar conventional signs from the school environment, but the rule is often broken on the playground usually "by pupils who have been in combined schools." One of the day-schools, where combined methods of instruction are in part employed, finds the use of signs prevalent, especially in play, although efforts will be made to exclude them entirely from the oral department.

There seems to be no particular method of lip-reading specially favored, although there appears to be a tendency to rely upon composite methods evolved from the experience of the school itself.

EXTRA SCHOOLROOM ACTIVITIES

Children in day-schools, as in residential schools, during free hours play the same kinds of games that normal children do. In 10 of the 13 schools there is definite instruction in games. In practically all of the schools also, toys are provided for the play periods, although these sometimes consist only of balls or bean bags. At the time of the survey only 4 of these schools provided playground

apparatus, and in all of these but one, the supply was rather meagre. In one other case plans were in progress to raise funds to acquire such equipment.

In only one of the 13 day-schools do the pupils have a club or society of their own; in this case the older boys have one club, the manual training teacher acting as leader, and the girls another, the domestic arts teacher serving as leader. In only one case also do the pupils help manage a school paper. In most instances, 9 of the 13, the children hold dramatic entertainments, usually on special occasions, such as meetings of parents' associations, or holidays. In practically the same number the pupils give social entertainments, usually birthday or schoolroom parties.

In none of the day-schools studied is there any regular religious organization.

Five of the 13 day-schools at the time of the survey possessed a motion-picture machine, and 3 others had access to one. Another of these schools was to have one installed upon the completion of a projected new building. In only one case is the machine used extensively only for the entertainment of the children; usually it serves an educational purpose, as a supplement to the regular classroom work. Six of these schools have other apparatus of a similar nature, consisting of slide lanterns, delineoscope, stereoscopes, or stereopticon.

Only 4 of the 13 day-schools make arrangement for lectures by persons not connected with the school. These are given orally, and consist usually of talks on safety, the Red Cross, fire prevention, and topics of patriotic interest.

In only 2 cases do the pupils engage in athletic contests with outside teams, in one case the teacher of manual training making the arrangements, and the playground director in the other. In 2 other schools some of the older boys join the teams composed of hearing boys from the regular grade schools.

In 9 of the schools studied, the pupils visit industrial

plants at times as part of their educational work, in one they visit farms for the same purpose, in 3 they visit markets, and in 7 they go to stores in the city. Seven of these schools also make it a practice for pupils regularly to visit points of historical interest. In one of these schools, an especially interesting practice prevails; each year the members of the graduating class are given a three-day trip to Philadephia and Washington, during which they are received at the White House. The prospect of this experience is held out as an effective inducement to keep pupils in school until they complete the course.

OCCUPATIONS OF GRADUATES

The lines of work taken up by the graduates of day-schools vary greatly. According to the information obtained, these may include the following—the figure after the name of each occupation indicating the number of schools (7 day-schools giving information):

Printing	7	Bookbinding	2
Auto repairing	3	Candy making	2
Carpentry	3	Cigar making	2
Dressmaking	3	Drafting	2
Farming	3	Factory work	2
Millinery	3	Flower making	2
Baking	2	Typewriting	2

Named once each: Abattoir work, architectural drawing, clerical work, commercial art, comptometry, designing, electrical supplies manufacturing, engraving, hairdressing, jewelry work, leather work, machinist work, metal work, painting, piano parts making, power machine operating, sewing, shoemaking, sign painting, tailoring, upholstering.

Two other day-schools reported information not included above. One of these stated that its graduates take up miscellaneous types of work, without specifying. The other replied that it had very few graduates; several girls had married, several were in the city vocational schools, two were in the city high school, one was forelady in a factory, and one was learning printing.

Only 1 of the 13 day-schools stated that its graduates enter trades taught in school; another answered, "to some degree." There was no reply from any of these schools

regarding the percentage of graduates occupied at the time of the survey, in trades learned at school.

Only a few of the same schools ventured to give reasons for the selection of the trades taught. The answers are as follows:

1. Because they lead directly to positions. Often we find they lead to lines of work not directly connected with what has been taught but as a result of what has been taught.
2. For educational value.
3. No trades taught in our own school. Pupils go to the vocational high school. Trades are selected in agreement with pupils' aptitude and the trades offered.

The following systems are in use in helping graduates of day-schools obtain positions:

1. The trade schools to which the pupils are sent for their vocational training have employment departments. The school board also has an employment department, and the state industrial commission has a person in charge of placing deaf persons.
2. On request graduates are given a list of places where it has been found such pupils may be employed.
3. A placement teacher is in charge of trade work for all handicapped children. This teacher also arranges the course of study with due regard to the pupils' future.
4. A vocational counsellor in the employ of the vocational guidance department of the city public schools.
5. Personal aid by members of the school staff.

Only 2 of the 13 day-schools make answer as to the earning power of their graduates. In one case it is from $8 to $50 per week, and in the other from $15 to $50 per week.

As a rule the pupils attending a day-school reside within the same city, and after graduation occasionally pay visits to the school. This seems to be the principal method by which these schools are able to keep in touch with them and their work. Sometimes the alumni organization helps in this, or it may be the parents' association. One school also keeps a card catalogue, but this is not complete.

One of the 13 day-schools employs a social worker whose salary is not stated, and whose chief duty consists in looking up new pupils. Another school employs a visiting teacher whose salary equals that of classroom teachers, beginning with $1,900 and increasing annually $150 until the maximum of $3,250 is reached. An ex-

amination and special license are required for the position. This visiting teacher makes clear to the parents of new pupils the advantages of the oral method which the school employs. She also arranges for the safe travel of the children to and from school, and attempts to allay the fears that foreign-born parents may have regarding a school for deaf children. In a third school, certain teachers visit the homes of pupils for teaching and social service work. These teachers are paid $3 a visit, but a "visit" often includes two or three homes.

RELATION WITH HOME

Ten of the 13 day-schools conduct parent-teachers' meetings, monthly in 5 cases, five times a year in another, and at varying periods in the remainder.

In 4 of the 9 schools answering, a report of the pupils' work is sent to their homes monthly; in the other 5 this is done "eight times a year," "every 5 weeks," "every 6 weeks," "bi-monthly," and "every quarter," respectively. Parents are at liberty to visit the schools as often as they wish. In most cases also, the schools encourage their pupils to use speech at home, although in 2 schools, at least, effort refers particularly to English-speaking homes.

All the children in 2 of the day-schools are reported as communicating with their parents entirely by speech when at home, and in another "mostly all." In two schools speech and "natural gestures" are relied upon, and in another, speech, writing and natural signs; no attempt is made to calculate per cent. In 4 other schools giving answer, the estimate varies—"95 per cent by speech and 5 per cent by signs," "more than 90 per cent by speech and 1 per cent by signs," "about 90 per cent by speech and about 10 per cent by writing," and "60 per cent by speech, 5 per cent by writing, and 30 per cent by 'natural signs'."

Four of these schools state that their children communicate with strangers when at home entirely by speech; in

another, more than 90 per cent by speech; and in still another, about 60 per cent by speech.

SCHOOL POLICY

The grading of the children in most of the schools studied—9 of the 13—is done by the principal in consultation with the classroom teachers, and in one other case by the head assistant with the teachers. In 2 more schools this is the duty of the principal alone, and in another it is left to the teachers themselves. This occurs, in 7 schools, at each promotion time—that is, twice a year—and in one of them in addition whenever necessary for individual cases. In 4 schools, grading is an annual practice, although individual children may be reassigned at any time. One school follows the custom of its city school system of quarterly grading, and 1 school leaves the matter open for any time. In most of the schools—9—the grading is based on a general average of all the subjects taken, although in one of these success in speech and lip-reading does not affect the general standing. In another school English work alone determines advancement, and in one other case English, speech and lip-reading are relied upon.

Only 4 of the day-schools employ the rotating system, and then only for certain grades. In one of them, this system was in use in practically all subjects for all grades above the first, the latter including the first four years of school life; a change, however, was contemplated here. In a second school the rotating system applies only to the upper grades for geography, arithmetic, art, and writing, and sometimes for language work. In a third school the same system is in force for all the work of the last three years of the course, and in addition once a week for speech-reading throughout the school, the aim here being to afford the children as varied a practice as possible. In the fourth school only the sixth, seventh and eighth grades are involved, for geography, history, literature and mathematics.

In only 1 of the day-schools have pupils ever been

transferred from oral to manual, or from manual to oral classes, and then only on the ground that the change carried with it evidence of potential success.

The trades which the pupils learn are determined in one case by conference of teacher, parents and pupils; in another by the ability and preference of the child plus the opinion of the trade teacher and placement teacher; and in a third case the pupils are taught the trades required by the course of study—these being the only schools giving information on this subject.

The size of classes in day-schools is determined by varying factors. It may be, as in 3 schools, a rule set by the board of education. In two other cases—both in the same state—it is determined by the state educational department, namely not less than 5 nor more than 10. In other cases the determining force may be the size of enrollment, the number of grades in a class, "the number of pupils who must be squeezed into a too-small building," the school grading arrangement, or the number of teachers permitted by each year's budget.

The information regarding average size of day-school classes may be summed up in the following table, the common practice apparently being 8 pupils to a class.

6 pupils	1 school
7 pupils	2 schools
8 pupils	5 schools
8 or 9 pupils	1 school
9 pupils	3 schools
12 pupils	1 school

In the only day-school containing manual classes, the latter are not necessarily larger in size than oral classes.

Three of the schools made a definite statement as to the relations of their teachers with other schools. In one they share all the activities of the public school teachers of the city; in another they are allowed 3 days a year to visit other schools and on occasion extra time for special study without loss of pay; and in the third they are allowed one visiting day a year.

The following examples illustrate fairly well the ses-

sion plan of the daily schedule in a day-school, these being the only schools for which figures were obtained.

Daily program	Recess	Lunch period	Industrial work
9 a.m. to 2 p.m.	———	30 min.	After 2 p.m.
8:50 a.m. to 3:25 p.m.	20 min.	65 min.	———
9 a.m. to 3:20 p.m.	———	60 min.	2 periods weekly
8:45 a.m. to 2:45 p.m.	45 min.	45 min.	1½ hours

Study work outside school hours, especially for the upper classes, is assigned in a number of the day-schools, although as a rule no definite time is set. As this is done at home there can be no supervision, although the coöperation of the parents is sought.

Eight of the 13 day-schools send pupils when possible back to the public schools for the hearing. Three of the others do so only rarely, and one other only on trial, the experience here being that some of them return. The number of such children varies from 1 to 10. Opinion as to the success of pupils returned to the public schools seems to be equally divided, three schools maintaining that it has been good and three that it has been poor.

Ten of the day-schools prepare pupils to enter high schools for hearing children. Another school sometimes does so, and still another expects to do so. In the 5 years preceding the survey, one school had prepared 1 such case; another 5; three had sent up 6 children; another 13 children; and one other, 29. According to the report received, these pupils have been successful in their higher work. One school qualifies its answer, stating that this success has been only fair, since the size of schools for the hearing makes it exceedingly difficult for deaf children to get on. Only one of the day-schools prepares pupils for admission to Gallaudet College, ten children having received such training in the five years preceding the survey, three of whom were successful in entering college.

As part of the school policy only 3 day-schools consider it necessary to supply educational magazines for their teachers. These include the *American Annals of the Deaf*, the *Volta Review, Oralism and Auralism*, and a few gen-

eral educational periodicals. Only 3 schools, also, venture upon courses in teacher training, although in one of them it is of a partial nature, and in another the courses are given at one of the city normal schools. In two schools teachers receive special promotion for summer work or educational study outside. In one school promotional examinations are required by the city school committee. There are no promotions in one school as all the teachers are on the same salary schedule. One school grants leave with pay to teachers who attend meetings of professional organizations.

The means of promoting professional growth may include such activities as special conferences, reports from teachers who visit other schools, lectures by prominent educators, visits to other schools, annual institutes, extension work at neighboring educational centers, summer schools and meetings of organizations of teachers of day-schools for the deaf in the same city.

Most of the day-schools studied hold teachers' meetings, monthly in 4 cases, semi-monthly in 2, regularly five times a year in 1, and in 4 at no stated periods, the aim of these meetings being to stimulate professional progress.

TRAINING OF TEACHERS

A regular course of teacher training is maintained in only one of the 13 day-schools. In this case a teacher in an elementary public school with three years' accredited experience in teaching, at least one of which must be in the public schools of the city, may, upon application, be assigned by the city board of superintendents for one year for teaching and training purposes to the school for the deaf without diminution of salary. The school is permitted three such teachers-in-training each year. In the five-year period previous to the survey, 10 teachers took this training. Such cadet-teachers also are on the salary schedule that applies to the first six years in the regular schools, advancing to the higher schedule of the school for the deaf upon appointment to the regular staff.

Altogether the school has trained 18 teachers, all but one of whom are still in the work.

PUBLICITY

Only one of the day-schools maintains a school paper, and in this case both the teachers and heads of the school oversee what the pupils prepare. The teachers also do the editorial work, although sometimes older pupils help. This paper goes to the homes of all the pupils.

Seven of the 13 day-schools take part in exhibitions or fairs, and three others do so only occasionally. Seven of these schools also participate in community projects, which may include such activities as "clean-up week," and pageants. A statement from one principal concerning this type of activity gives an inkling of the nature of a day-school.

> Our pupils come from 34 different towns and cities and from every part of our own city. The difficulties of transportation and the long distances prevent afternoon, evening, or Saturday plans. Only one child lives within walking distance. We do not represent a community. We encourage older pupils to share the interests of their own communities.

Three of the larger day-schools resort to definite measures of obtaining publicity. One has a place for its news on the school page of three of the city evening papers; in the same school also an "Open School Week" and graduation exercises bring visitors, and the parents' association helps as an agency in making the school known outside. In another case, exhibits and demonstrations of the work of the pupils before state teachers' conventions, and societies serve the same purpose. In the third school space in the newspapers for school events is a means of obtaining publicity.

ADDENDA

A number of principals of the day-schools which were included in this study made reference, at the close of their reports, to various features not previously covered by the questionnaire. As this information may help throw some

additional light on the character of the problems confronting such schools, a summary is here given.

School A.—As this is a public school it is compelled to accept all pupils who are residents of the city who because of lack of hearing cannot do the work of the regular grades. The school for this reason carries more semi-deaf children than do residential schools and more pupils of a low degree of mentality. It is not permitted in any sense to become a school of "picked pupils."

School B.—The hard-of-hearing children who have natural use of language are here grouped together. There are two such groups in this school, (1). First-, second-, and third-grade pupils; and (2). Fifth-grade pupils.

School C.—This school reports excellent progress on the part of those of its graduates who have entered high schools for hearing children. The school makes an effort to follow the city course of study from the latter part of the third grade (not third year) through the eighth in everything but music.

School D.—At the time of the survey plans had been completed here for the erection of an excellent new school building, up to date in every respect. This new building has since then been completed. It includes model classrooms, model trade rooms, a medical unit, an infirmary, a permanent exhibition room, a model apartment in connection with domestic sience work, a gymnasium, a library, an auditorium with motion picture equipment, a roof garden, and a model lunch room.

The parents' association, with almost 100 per cent membership and with an auxiliary committee of parents whose children have been graduated, proves of great assistance in dealing with school problems.

The many friends of the school contribute funds to send pupils to the country in the summer, to furnish free milk to 50 pupils daily, and for special treats for the boys and girls. One friend provides the means to send every graduating class to Washington for a three-day trip, reference to which has already been made in this chapter.

School E.—This school is in great need of a new building in a quiet neighborhood where the light can be admitted on all sides. There should also be playgrounds, a gymnasium, and facilities for furnishing a hot meal at low cost.

Other needs of this school include definite provision for training teachers, preferably in conjunction with a normal school or college, for a supervising teacher, a clerical assistant for the principal, and a carefully organized course of study.

No time is allowed by the authorities for follow-up work; for this a field officer is needed. A person with teaching experience might well combine the work of attendance officer, employment obtainer, and follow-up social worker with that of vocational counsellor.

School F.—A summary of the history of this school gives an interesting picture of the evolution of a day-school. The first bill for state aid for special classes (this included the subnormal, the blind, cases of defective speech, and the deaf) was passed by the state legislature in April, 1915. This bill allowed $100 per school year for each deaf child up to 10 years of age. In 1919 the state legislature raised the age to 16 years and the appropriation to $150. In 1921, the appropriation was raised to $250. In 1923, the age limit was advanced to 21 years, so that it is now 4 years to 21 years. The school year of 1924 to 1925 was the first year that the state appropriation was sufficient to finance the school, the number of pupils enrolled being approximately 70.

The school has passed out of the pioneer stage. During the years 1917 to 1924 it was housed in crowded quarters. In September of the latter year it was moved into new quarters with large comfortable airy rooms, an assembly room, and the use of an auditorium.

CHAPTER IX

PHYSICAL FEATURES OF PUBLIC DAY-SCHOOLS FOR THE DEAF

As with residential schools, a study was made of the physical features of the 13 day-schools included in the survey, the personal observations of the visiting representatives of the National Research Council furnishing the data upon which the analysis was based.

LOCATION OF SCHOOLS

All the day-schools have of course an urban location, and all also have the advantage of easy access by both rail and trolley. This, coupled with the fact that all but two are centrally situated, makes the location as a rule quite satisfactory with respect to accessibility.

Six of these schools are located in residential sections. Two are in the midst of business centers, and the remaining five schools are close to varied industrial activities which may include mills, foundries and factories. For the schools not located in residential centers, it must be stated, the attendant noises and disturbances of heavy commercial traffic are hardly conducive to quiet school work. At least six schools could probably be better served by a different location—two if they could acquire a more central situation, one if it could obtain more convenient transportation facilities, and three if the school could be established in a more quiet neighborhood. For one of the last-named group, plans were practically ready at the time of the survey for the erection of a new school, part of which was to be given over to classes for the deaf, in a strictly residential section.

SCHOOL PLANT

Grounds.—The average day-school does not possess extensive grounds. According to the information obtained, the site may include

One city square (350 ft. by 500 ft.)
Three-fourths of a city square
One-fourth of a city square
Between 2 and 3 acres
1½ acres
1 acre
Approximately 1 acre
137 ft. square
100 ft. by 200 ft.

In two additional cases the school building takes up the entire site.

In one case also the school for the deaf is merely part of a great congregate municipal school center that includes a large public elementary school, a junior high school and senior high school, and a normal college, making in all a school population of 5,000 individuals. In this case, the entire school grounds comprise 20 acres, of which 686,000 square feet are in campus and a little over 11 acres in athletic grounds.

In only 2 other cases is there anything resembling a campus, and that only a small grass plot.

Despite the meagerness of their grounds, 7 of the 13 day-schools studied manage to provide satisfactory play ground. In 3 other schools the play space, taking into consideration the size of enrollment, is not adequate; while 3 schools have no playground whatever.

Buildings.—The question of school housing, as it relates to the day-school plan, may be best presented by grouping according to age.

Group I.—This comprises those school buildings erected during the twenty-five years preceding the survey (1900-1925) which may properly be called "modern" structures. In all, 7 of the day-schools are included in this group.

School 1. Here the building, erected in 1924, is a splendid brick fire-proof structure of 15 rooms used as a public school, in which a number of classrooms are reserved for the deaf children. However, it has been necessary to place two classes of deaf children, with two teachers, in the same room.

School 2 and 3. The former, built in 1922, and the latter in 1917, are both excellent up-to-date buildings that meet the needs of a day-school admirably.

School 4. This has already been referred to as part of a great

city school center comprising different units, three buildings serving all.

School 5. Constructed in 1914, this is well suited for its purposes.

School 6. In this case a brick building, erected in 1900 and formerly used as a high school, has been turned over for the double purpose of a vocational school and a school for the deaf. In addition to the main building, the second floor of which is used by the deaf children, there is an adjoining annex and an outside gymnasium. The general condition is only fair.

School 7. Approximately 25 years old, this building is in good condition, but it is not entirely given over to the use of the deaf pupils.

Group II. This group includes the 6 day-schools whose buildings were more than 25 years old at the time the survey was made.

School 1. This is a typical one-building city school, erected in 1890 at a cost of $90,000. It has been kept in good repair, but is now too small and cramped for the needs of the school.

School 2. More than 40 years old, this is a typical old-style high school building with wide halls. Although still in good condition, it will probably be disposed of for business purposes as the site is very valuable. The deaf pupils have the use of three rooms which, however, are located too close to the main entrance where there is much noise.

School 3. Built in 1880, this is an old-style brick public school building, kept in fair condition, and reasonably suited for the work of a school for the deaf.

School 4. This school is housed in an old wooden structure comprising 3 portables, two of which are detached. Its condition is good, but it is hardly suited to the needs of a school; there is very little plumbing, and it is heated by stoves.

School 5. Here the building, very old, is in poor condition, out of date in every respect and quite inadequate for a large day-school.

School 6. This school consists of two buildings, a brick structure 60 years old, in fair condition, and a house of very good type a block away as an annex. Both answer well the purposes of the school.

Since the survey was made, 4 of the 6 schools in Group II—schools 1, 4, 5, and 6—have had new buildings of the most approved type, especially equipped as schools for the deaf, completed for their use.

Schoolrooms.—The size of classrooms, according to cubic foot allowance per pupil, and window space appear to be satisfactory in practically all the day-schools visited. One school where this was not so was soon to have a new school plant built.

In at least 8 of the day-schools the lighting of the

schoolrooms is satisfactory. In the others this is only partially so, although in a number of these cases this and other schoolroom defects are to be remedied in the projected new buildings. In only 1 of the 13 schools was the ventilating system found unsatisfactory. In 6 of them open windows alone are relied upon, in 5 others there is a fan and shaft system, and in 1 other case air is pumped in and the windows also are used. A majority—8—of the day-schools visited use good slate class boards. The others depend upon various types of composition, paper and painted board. In practically all the schools the seats and desks used by the children are modern and adjustable, usually the Molthrop type. Other furniture in the classrooms may include a variety of equipment, principally desks, tables, bookcases, bookshelves, chairs, and cabinets.

A number of special schoolroom features noted include cabinets for holding maps and charts, especially spacious ventilated clothes closets, an excellent ventilating system, a special telephone system, sliding blackboards, well chosen pictures, plaster models of famous men and women, reproductions of works of art, vases for flowers, and cupboards.

Two of the 13 schools have no auricular equipment. All the others have at least a piano for this purpose—in one case two pianos—supplemented usually with speaking tubes, or a selection of one or more of the following: audiclares, drums, ear phones, audiometer (in only 1 school at the time of the survey), whistles, acousticon, harmonium, cymbals, tambourines.

Most of the schools also, 9 of the 13, are equipped with an ample supply of maps, charts and illustrative material.

Shops.—Only 3 of the 13 day-schools are equipped with print shop facilities, and in one of these the apparatus is not in use. In the other two the equipment consists, in one instance, of press, cases of type and paper cutter in a small room, and in the second, of power press and

type. In still a fourth school, the pupils have access to equipment in a junior high school with instruction from a trained teacher, mainly of a prevocational nature.

The boys in 12 of the schools take woodworking, but this in each case is only an elementary course in manual training, and at best the equipment consists only of benches and bench tools. Further, in 3 of the 12 schools the pupils do this work at a nearby public school which is provided with the necessary apparatus.

A majority—8—of the schools also have equipment available to teach cooking and sewing, although in a few instances this equipment is in connection with a neighboring school for hearing children.

Gymnasium.—Five of the 13 day-schools have no gymnasium facilities. In one other instance the pupils use the gymnasium of a school close by, and in still another school the assembly room, equipped with dumbbells, clubs and wands, is used. In the remaining 6 schools the gymnasium itself is quite satisfactory, with a sufficient supply of modern apparatus, although in one instance no use is made of the facilities available because there is no instructor. In the few schools, possibly 6, where provision is also made for indoor sports, basket ball seems to be the most favored.

Playground.—Only 4 of the 13 day-schools provide play facilities. In one case baseball is the only activity; in another, basket ball and handball, both boys and girls using the same grounds; in a third there are poles and ladders and provision for basket ball and baseball under the supervision of the physical training teacher; the playground in the fourth school in this group is furnished with swings, rings, slides, teeters, and giant swing, and the sports provided for include basket ball, tennis, volley ball, soccer, and indoor baseball.

Six of the day-schools studied have no special playroom arrangement. In 2 other schools, the playroom space, located in the basement, is cramped and poorly

lighted and ventilated. In the remaining 5 schools, the playroom provision is quite satisfactory as to size, location, air and light.

General Condition of Plant and Equipment.—It might be well, at this point, to give a summary of the general condition of plant and equipment, and the plan, if any, for growth and expansion of the day-schools studied. The symbols used to identify each school are the same as those used in other sections of this report.

D-1. This school is a building of many years standing erected at two different periods, the older part now being used by the classes for the deaf. The general condition is good. Its central situation probably explains why it was originally chosen as a school for the deaf.

D-2. The school is in perfect condition and the plant is complete for its purpose.

D-3. This school, not more than 10 years old at the time of the survey, is modern in every respect, and is kept in excellent repair. It is fireproof throughout, well lighted and well constructed. To serve the needs of the city, probably another school on the same plan should be erected in another location.

D-4. Here the school, used principally as a city high school building housing nearly 800 pupils, presents a good appearance though of an old-fashioned type. It is, however, kept in good repair. It is too noisy an arrangement for the school for the deaf. A less noisy location would be desirable, but as the school is so accessible, probably no move will be made to place the classes for the deaf elsewhere.

D-5. At the time of the survey this school was housed in two structures, a main building and an annex, both in good condition and adapted to the needs of the school. Since then a splendid new building has been completed.

D-6. This is a modern school building, complete for all the needs of a day-school. However, there is no room

for growth without encroaching upon space provided for play.

D-7. The building is old but substantially constructed and kept in good repair. A new building, especially designed for use by deaf children, is to be erected.

D-8. Here the school for the deaf is housed in a large public school of about 500 children. The building is very well kept, but because of the din of outside traffic and the coming and going of the other children, the classes for the deaf may be transferred to a new building later on.

D-9. This is a building which, although not given over entirely to the use of the deaf, is at least satisfactory for their needs. It is in good condition, and no change is at present contemplated.

D-10. This is the school previously referred to as part of a great city school center with a total population of approximately 5,000 children. The part of the plant used by the deaf is satisfactory with respect to physical condition.

D—11. The school building is an old condemned wooden structure, to be torn down. A new grade school is to be erected in which the deaf pupils will have 4 rooms and an auditorium. The new site comprises 6 acres, so there will be ample playground.

D-12. Here too the building was found to be old and entirely inadequate for a large school for the deaf. Since the survey it has been torn down and a model school, especially equipped along the most approved lines, erected on the same site.

D-13. This school is housed in an excellent public school building of the latest type, but the space allotted to the classes for the deaf is hardly sufficient for their needs.

MEDICAL CARE

Equipment.—Only 1 of the 13 day-schools has equipment for dental work within the same building; in an-

other case there is complete equipment available at a public school but a short distance away. Facilities for eye examination—and scanty at that—are provided in three of the schools, in one case only charts. Only one day-school, also, has a clinic arrangement within the same building for the examination of ears.

Eleven of the 13 day-schools have the services of a physician on regular salary paid by the city board of education. In one other case a prominent otologist has given the school special attention for almost twenty years without remuneration, making a visit to the school once a week. A set of instruments for the use of his clinic at the school has been purchased by the parents association. Four of the schools also have in their employ a dentist and an oculist as specialists.

All of the 13 schools have a trained nurse on a schedule of regular visit which may be three quarters of an hour every day and five hours one day a week (in this case a very large school); daily; four times a week, with additional calls at the homes of pupils; two half days a week; once a week; and once a year.

A physical examination is given children at time of admission in 8 of the 13 schools, and in one other case as soon thereafter as possible. Further, in only 2 schools is an examination made of the children when they return after the summer vacation, nor does any of these schools demand an examination at the close of short vacations. The physicial examination is a periodic affair in 9 schools—once a year in two of them, once each semester in two others, and in another the examination deals only with head, teeth and skin.

In 7 of the 13 day-schools vaccination against smallpox is required of all the pupils. In another there is a rule to that effect but it is not enforced; in another this is compulsory only during times of epidemic; and in still another school the children are vaccinated unless the parents refuse consent. Also, in none of the day-schools

studied are the pupils required to take inoculation against typhoid fever. Wassermann tests are administered only on medical advice, usually in connection with suspicious cases. Four of the day-schools are reported as recommending to parents that pupils be given the Schick test and in two of the same schools the Dick test also.

Dental health is apparently given careful attention in the day-schools. As a rule,, the dental needs are determined from inspection at the school by the school physician or nurse or by visiting school medical inspectors, and treatment given at moderate charge by the school dentist or by clinics. The city assumes the cost when parents are unable to pay. A similar procedure holds for the care of the eyes of pupils. Cases of ear trouble are also dealt with in very much the same way.

Six of the day-schools state that the hearing of pupils is tested at entrance. Six others qualify the same statement—that is, the hearing is tested, but "not scientifically"; in two the teachers test the hearing; in one, "with the voice"; and in one other, hearing is tested at entrance but "not with the audiometer." Moreover, at the time of the survey in only 1 school was hearing tested at regular intervals.

A majority of the day-schools, 8 of the 13, keep weight charts, used in most of them in connection with suggestions as to diet. When necessary, the matter of underweight and malnutrition is taken up with parents by the health care department of the school and remedial measures discussed. On the whole, however, the children in the schools visited seemed to be in excellent condition.

In almost all the day-schools, general sanitary conditions were reported as excellent. In the case of the two schools that had one or two flaws in that respect, new buildings were soon to be provided. In the main, sanitary precautions include cleanliness of the school building, and a program of health talks for the pupils. The teachers also aid with careful personal inspection of the children.

All the day-schools, as units in city public school systems, are compelled to comply with city health regulations.

FOOD

The day-schools, of course, are not concerned with the problem of food supply as are the residential schools. However, as their pupils may be recruited from comparatively distant parts of the city, the lunch question is one that demands the attention of the school management.

An analysis of how this is dealt with indicates three general methods:

1. The school has nothing to do with the children's food, provides no facilities for lunch, and does not furnish milk.....2 schools.
2. The children bring their lunch and the school enables them to buy milk or cocoa at very small cost. (In one case the school supplies the drink free to those unable to pay).....3 schools.
3. A school cafeteria with kitchen, usually excellently managed, furnishes wholesome food at very low cost.....8 schools.

A few examples will suffice to show how the plan followed in the third group of schools works. Thus, in one school the children eat lunch in a basement cafeteria where for 5 cents they can get soup, beans and one sandwich; milk, 4 cents; spaghetti, potatoes and gravy, cocoa, 4 cents; ice cream, 5 cents. The highest cost of anything is 5 cents. The children are supervised during the lunch hour. Also, under a similar arrangement in another school, the children may obtain a soup, a salad, milk, a vegetable dish, and dessert, with sometimes a meat course—all in generous portions and at very moderate charge. Here even the kindergarten children go to the cafeteria where their teachers help them get their food and show them how to pay the small sum asked. In another case, the food is prepared in kitchens that are a special feature of the city school system and carried in containers to the school where, for 7 cents, each child may obtain a lunch consisting of two slices of buttered bread, soup or cocoa or milk, and a vegetable or pudding or stewed fruit. In another school a lunch is served each day

for 5 cents, and for 2 cents in still another, the menu in the latter case consisting of a glass of milk and a dish such as hot creamed cabbage or potatoes.

FIRE PROTECTION

Fire exits are provided in sufficient number in practically all the day-schools visited; this was doubtful in only one case. In 6 of the 13 schools, however, these exits are not distinctly marked, and in 1 of them they are not marked at all. Only 5 of the schools were equipped with water hose and none with chemical engines. All but one, though, keep extinguishers at hand for emergency. The water supply in all cases is that of the local city system, as is also the fire alarm connection. Fire drills are held once a week in 2 schools, twice a month in 6 schools, once a month in 4 schools, and in 1 other case "no record." These drills are as a rule carried out very efficiently, and in most cases, in 11 of the 13, are held without notice.

For none of the schools is there any question concerning the adequacy of the measures for protection against fire. The buildings are either very easily emptied or are of fireproof construction. In one instance not only is the building itself fireproof, but it is built alongside a hill so that the children can step out to the ground from each floor.

CHAPTER X

THE COMPOSITE PUBLIC DAY-SCHOOL FOR THE DEAF

A picture of the typical day-school as a functioning unit may be obtained from an analysis of the data relative to such schools already given. It must be remembered, also, that this average school is not here intended as the model school. It is rather a composite of the practices in greatest vogue among the day-schools studied during the survey.

The past quarter of a century has witnessed a remarkable growth in this country on the part of the day-school for the deaf. In terms of enrollment it has steadily extended its scope, assuming a distinct place in the field formerly taken over almost entirely by the residential school.

Type.—The day-school is an integral part of a city public school system, with all the characteristics of a public school, namely, that it is free, non-denominational, and without restriction as to entrance. The typical day-school comes under the general management of a city board of education and is thus unhampered by political considerations. A principal is the chief officer in the school, receiving appointment through the board of education and holding office, after having given evidence of capability, for life, although responsibility to the city superintendent of schools is the rule. The principal is not concerned with the management of funds in connection with the school, nor with the appointment of members of the teaching staff, or other employees of the school, this power usually resting with the board of education. The principal, also, without the aid of an assistant, includes supervision of school work among her duties.

Financial Support.—The typical day-school derives its support from public appropriation on an annual budget plan that includes the general city school system in which

the day-school is a unit. The budget system also governs the handling of funds in which the day-school alone is concerned.

The public character of the day-school is emphasized by the fact that pupils are not required to pay for tuition regardless of ability to pay. Pay pupils from outside the bounds of the city may be accepted although the occasion very seldom occurs.

It was not possible to ascertain the per capita cost in the day-school with any degree of completeness; it may approximate $300. Further, owing largely to the fact that the fiscal aspects of the management of the day-school are left with the central authorities of the city, there was a similar lack of data on the matter of cost of upkeep of plant, salaries of academic teachers, school equipment, library equipment, comparative increase in total expenditures, and per capita cost over a ten-year period.

School Administration.—The teaching staff in the average day-school is governed directly by the principal in accordance with city rules and regulations, and the pupils through the teachers and officers. The school itself is not directly concerned with business matters; such details are attended to by the disbursing office of the central school authority. The principal and teachers keep in close touch with parents of pupils as an aid in the management of the pupils.

Legal Status.—A compulsory school law exists for the typical day-school, and public officials must notify the school authorities of children who should be enrolled in a school for the deaf.

Admission of Pupils.—Only children who are deaf or so hard of hearing that they cannot continue in the ordinary public schools and who are of "teachable mentality" are accepted as pupils, usually at any age between 4 and 21. No legal limit is set to the length of schooling allowed, nor is there distinction as to race or color. No provision otherwise is made for the feeble-minded deaf.

Teaching Staff.—A high school and normal school course and some special training to teach the deaf are the general qualifications demanded of teachers in the average day-school. The school staff, also, is almost entirely composed of hearing women.

Salaries.—The average annual salary of the principal may be a minimum of $2,600 and reach a maximum of approximately $3,450. The average minimum for women teachers is approximately $1,440, and maximum $2,350, ten years being the average number of years of service necessary to reach the latter. Industrial men teachers obtain an average minimum of $1,925, and a maximum of $2,850 after nine years of service; women industrial teachers start at an average of $1,590 and after 9 years of work reach $2,640.

Because the teachers in the typical day-school are also members of a city school system, they thereby may become beneficiaries of a pension retirement plan.

School Curriculum.—The course of study, although not prescribed by law, is intended to cover the ordinary 8 years of elementary public school work. The course also includes preliminary work in manual training for younger children although there is no definite correlation between the manual and academic work. However, no actual trades teaching is undertaken in the average day-school. A systematic course in physical training, supplemented by regular training in hygiene, is modeled on the plan in use in other city public schools. Rhythm work is also a regular part of the curriculum.

The day-school course does not concern itself with special moral training, this being left to the religious dictates of the home.

For textbooks the day-school has available the list prepared for use in all the public schools and, in addition, choice of such special books to meet the needs of deaf children as it deems necessary. Especially for language

work the principal reliance is upon books prepared by teachers of the deaf.

The average day-school does not provide special library facilities, although it does maintain contact with public libraries, borrowing sets of books for class use. The aim is to encourage use of the public library outside.

School Records.—The average length of school life, as indicated by the day-school records, appears to be between 9 and 10 years. Economic pressure is the usual cause of pupils' leaving school before graduation; lack of ability to keep up with the work is the next important cause. No record of the after-school life of former pupils is kept.

Methods of Instruction.—Since its start the average day-school has been decidedly oral, although no particular method is prescribed by law. Auricular methods are also followed when practical. No definite procedure has been evolved to determine with greater accuracy the measure of success in speech work. The present method is a dependence upon only general results.

All forms of manual language are tabooed, in accordance with the sentiment that such means of communication are inconsistent with good oral instruction. Writing is begun as soon as the child enters.

Extra Schoolroom Activities.—The day-school provides for instruction in games during free time of play, although very little playground apparatus is furnished. As a rule, also, in the day-school there is no club activity among the pupils, nor do the latter maintain a school paper. Dramatic entertainments are occasionally held, usually for special occasions. Motion-picture equipment is available for use, often for educational purposes.

Sports and athletics are not on an organized basis, and teams are not maintained by the pupils.

Trips are made to various points of educational interest, usually industrial plants, stores in the city, and historic landmarks.

Occupations of Graduates.—Printing seems to be the

occupation most favored by the graduates of the typical day-school, with auto repairing, carpentry, dressmaking, farming, and millinery next in importance. Some sort of effort by school experts is made at proper advisement and placement of pupils. Little information as to earning power of graduates is available. As the pupils live in the same city, they occasionally visit the school after leaving it; this is the usual means of keeping in touch with them.

Relation with Home.—A parent-teacher association, with periodic meetings, serves to bring together the school and home. Parents are also encouraged to visit the school. Regular reports of the work of pupils are sent home. The pupils are advised to use speech when at home, and the feeling is that they do communicate with their parents mainly by speech.

School Policy.—The principal in consultation with the teachers attends to the grading of the pupils, usually at the regular promotion time. This grading is based on an average of all the subjects taken.

The size of classes is not always a matter of control; it may depend upon the board of education, upon the size of enrollment, schoolhouse facilities, or the number of teachers provided by the budget. Usually there are 8 pupils to a class.

The average day-school attempts to return children to schools for the hearing when possible. Pupils who show promise are also prepared for entrance to public high schools.

Teachers' meetings are the principal means by which the school promotes professional growth. The average day-school is itself unable to maintain a course of training for teachers. Efforts to make known to outsiders the work the school is doing may take the form of public exhibitions and participation in community projects.

Location.—The typical day-school is centrally located and easily reached. Its urban location, however, subjects

it to the disturbances of heavy business traffic so that it is not always possible to do ideal work.

School Plant.—The grounds are of very limited extent, with little opportunity for campus extension. Still, satisfactory playground space is provided, and on the whole the grounds are adequate for the needs of modern schoolroom work.

The average school, whether it is a separate unit in a building to itself or classes assigned to a public school for hearing children, is well housed in a modern well equipped structure. The schoolrooms are quite satisfactory as to size, window space, lighting, ventilation, seats, desks, and general equipment. A piano at least, provides for the rhythm work. Equipment for elementary shop work, cooking and sewing is also furnished. Gymnasium facilities, too, are available, although no particular effort is made to equip the playground with the necessary apparatus. In addition the provision for play indoors is not entirely satisfactory.

Medical Attention.—The average day-school has no equipment for medical care, but it does have the services of a physician and a trained nurse on regular salary schedule. The children are given a physical examination at the time of entrance and again at periodic intervals. Vaccination against smallpox is also required. Careful attention is given to condition of teeth and eyes, and remedial measures prescribed, the city assuming the cost when parents are unable to do so.

The hearing is tested when pupils enter but this follows no standard method. Weight charts are kept as an aid for suggestions on physical improvement.

General sanitary conditions are very good and the children seem to be in an excellent state of health.

Food.—The main interest of the day-school in the diet of its pupils is in the management of a cafeteria for lunch purposes. This is an excellent arrangement whereby

wholesome food and good service are provided at very moderate cost to the pupils.

Fire Protection.—Precautions for safety against fire—in the number of fire exits, extinguishers, water supply and fire alarm connections, fire drills, and type and construction of building—are quite satisfactory.

CHAPTER XI

INFORMATION CONCERNING PUPILS IN SCHOOLS FOR THE DEAF

The present chapter concerns itself with a study of the pupil population in American schools for the deaf. This study is based upon detailed data, collected during the recent survey carried out by the National Research Council, on various aspects of the personal history of children enrolled in such schools. The information obtained relates to a typical group of children twelve years or more in age, the schools included in the survey being themselves representative units in the American system of education of the deaf.

As shown by Table I, a total of 4,689 children were included in the survey.[1] Of this number, 2,525, or 53.8 per cent, were boys. There was very little difference between residential and day-schools; in both types of schools boys predominated in practically the same ratio.

TABLE I

Distribution of Pupils According to Sex

	Residential Schools		Day-Schools		Total	
	Number of Pupils	Per Cent	Number of Pupils	Per Cent	Number of Pupils	Per Cent
Boys.....	2,160	53.9	365	53.4	2,525	53.8
Girls.....	1,846	46.1	318	46.6	2,164	46.2
Totals..	4,006	100.0	683	100.0	4,689	100.0

[1]The total number of children enrolled in schools for the deaf in the United States, October 20, 1924, the year of the survey, as reported in the *American Annals of the Deaf* for January, 1925, was 15,463.

NATIVITY OF PUPILS

The matter of birthplace of pupils affords an interesting sidelight on the composition of schools for the deaf. One twentieth, or 4.9 per cent, of the school population is foreign-born. A summary of the information obtained on this is given in Table II.

TABLE II

Nativity of Pupils

	Total	Native	PerCent of Total	Foreign-born	Per Cent of Total
Residential Schools.	3,835	3,690	96.2	145	3.8
Day-Schools.....	690	613	88.8	77	11.2
Total.....	4,525	4,303	95.1	222	4.9

Here it is indicated clearly that the day-schools attract a proportionately larger number of children who are foreign-born. Inasmuch as the day-schools are established in large urban industrial centers, this is a condition to be expected.

The racial composition of the foreign-born element in the schools studied is shown in a list of the countries named as birthplace, under the following headings according to frequency:

Residential Schools		Day-Schools		Both	
Russia	35	Russia	20	Russia	55
Italy	29	Poland	18	Italy	43
Canada	17	Italy	14	Poland	35
Poland	17	Canada	5	Canada	22
Austria	8	England	4	Austria	10
Mexico	5	Hungary	4	England	8
England	4	Austria	2	Hungary	8
Hungary	4	Sweden	2	Mexico	5
Philippine Islands	3	Gibraltar	1	Philippine Islands	4
Turkey	3	Hawaiian Islands.	1	Turkey	4
Czecho-Slovakia	2	Philippine Islands	1	Scotland	3
Netherlands	2	Scotland	1	Czecho-Slovakia	2
Roumania	2	South Africa	1	Netherlands	2
Scotland	2	South America	1	Roumania	2
Spain	2	Syria	1	South Africa	2

Residential Schools		Day-Schools		Both	
Alaska	1	Turkey	1	Spain	2
Armenia	1			Sweden	2
France	1			Alaska	1
Germany	1			Armenia	1
Lithuania	1			France	1
Newfoundland	1			Germany	1
Palestine	1			Gibraltar	1
Porto Rico	1			Hawaiian Islands.	1
South Africa	1			Lithuania	1
Venezuela	1			Newfoundland	1
				Palestine	1
				Porto Rico	1
				South America	1
				Syria	1
				Venezuela	1

AGE WHEN HEARING WAS LOST

Table III summarizes the data obtained as to age when hearing was lost. The line indicating 1 year includes those children who lost hearing between birth and the second birthday.

TABLE III

Age When Hearing Was Lost

Age	Residential Schools		Day-Schools		Total	
	Number of pupils	Per cent	Number of pupils	Per cent	Number of pupils	Per cent
1	516	12.4	82	11.7	598	12.3
2	604	14.5	74	10.6	678	14.0
3	238	5.7	52	7.4	290	6.0
4	122	2.9	39	5.6	161	3.3
5	98	2.4	32	4.6	130	2.7
6	62	1.5	23	3.3	85	1.8
7	58	1.4	15	2.1	73	1.5
8	39	0.9	19	2.7	58	1.2
9	21	0.5	14	2.0	35	0.7
10	29	0.7	9	1.3	38	0.8
11	11	0.3	4	0.6	15	0.3
12	9	0.2	6	0.9	15	0.3
13	9	0.2	.....	.....	9	0.2
14	5	0.1	1	0.1	6	0.1
15	1	0.02	.....	.....	1	0.02
Unknown	382	9.2	85	12.2	467	9.6
Congenital	1,953	47.0	244	34.9	2,197	45.2
Total...	4,157	99.92	699	100.0	4,856	100.02

The comparison between residential and day-schools reveals significant differences as to type of pupils. In the residential schools 47 per cent of the enrollment is made up of congenitally deaf children, as against 34.9 per cent for the day-schools. Another distinct difference is the fact that a greater proportion of children in residential schools are reported as having lost hearing at the ages of 1 and 2 than is the case with the day-schools. Conversely, in the day-schools the percentage of children is greater at every age when hearing was lost, from the third year on, than in the residential schools; that is, deafness in the pupilage of the day-schools occurs at a later age.

A striking feature of the same table is that so large a proportion of the total number of children studied is contained in the group of the congenitally deaf, namely 45.2 per cent. This may be contrasted with the returns for the Federal Census for 1920, when only 38.58 per cent of those for whom information was obtained were reported as having been born deaf.[2]

Further study of the figures shows how great is the toll which the causes of deafness exact of the early years of childhood. Thus, of the 4,856 children considered, 3,924, or 80.81 per cent—four-fifths—were deprived of hearing before the fifth year. And this does not take into account those—467 in number, or 9.6 per cent of the total—for whom the age of onset of deafness was unknown, cases in which the uncertainty itself suggests the very early years as the time when hearing was lost. Further, 77.49 per cent of the total number were reported as deaf before the fourth year; 71.52 per cent before the third year; 57.56 per cent under two; and 45.2 per cent were born deaf. That the early years of childhood are the most susceptible to the causes of deafness is further reflected in the descending ratio of the occurrence of deafness with each succeeding year.

[2] "Deaf-Mutes in the United States, 1920," Bureau of the Census, Department of Commerce, [Government Printing Office, 1923,] page 22.

CAUSES OF DEAFNESS

Although the information obtained concerning cause of deafness may not be entirely accurate, owing to the difficulty that frequently arises in determining the exact cause, the data here given may serve at least for general conclusions, particularly as to the relative importance of the major diseases resulting in loss of hearing.

Eliminating those children who were born deaf, reported under this heading as 2,020 in number, the information for the remainder, 2,629 children, may be summarized as given in Table IV.

TABLE IV

Cause of Deafness

Cause of Deafness	Number of Children in			Cause of Deafness	Number of Children in		
	Res. Schl.	Day Schl.	Total		Res. Schl.	Day Schl.	Total
Meningitis	327	54	381	Catarrh	30	8	38
Scarlet Fever	134	58	192	Diphtheria	26	10	36
Measles	114	36	150	Convulsions	29	6	35
Falls and Blows	114	32	146	Earache	32	.....	32
Whooping Cough	111	10	121	Influenza (Grippe)	17	8	25
Abscess in Ear and Head	95	14	109	Disease of the Ear	22	2	24
Pneumonia	80	11	91	Mumps	21	1	22
Sickness	56	17	73	Smallpox and Chicken Pox	8	1	9
Accident	50	20	70	Scrofula	6	.....	6
Tonsils and Adenoids	61	6	67	Lues	1	1	2
Typhoid Fever	42	9	51	Malaria	1	.....	1
Paralysis, Infantile Paralysis	40	10	50	All Other Causes	137	13	150
Fever	46	2	48	Unknown or Not Reported	468	111	579
Brain Fever	33	8	41				
Colds	39	2	41				
Mastoiditis	27	12	39	Total	2,167	462	2,629

According to the table just given, the five leading causes of deafness seem to be meningitis, scarlet fever, measles, falls and blows, and whooping cough. Meningitis appears to be especially virulent, resulting in deafness more frequently than any other two causes. This affords an interesting comparison with the census report for 1920[8] in which, with regard to 35,026 persons for whom information was obtained, the seven leading causes were as follows, the figures indicating the number of persons affected in each case: scarlet fever (3,346),

[8] "Deaf-Mutes in the United States, 1920," p. 28.

meningitis (3,237), brain fever (1,314), falls and blows (1,177), measles (1,083), typhoid (642) and whooping cough (636).

If it may be assumed that there is a relation between the reports made for meningitis and brain fever as causes, the two diseases combined would give them the predominant position in the census study. Typhoid, sixth in the census report, is eleventh in the survey list. Otherwise the results of the survey (1924-1925) tend to bear out the returns of the census.

AGE WHEN FIRST ADMITTED TO SCHOOL

Information as to age when first admitted to school was obtained for 3,743 children, 3,382 of whom were pupils in the residential schools visited during the survey. This information is summarized in Table V.

TABLE V
Age When First Admitted to School

Age	Residential Schools		Day-Schools		Total	
	Number of Pupils	Per Cent	Number of Pupils	Per Cent	Number of Pupils	Per Cent
3.....	4	0.1	5	1.4	9	0.2
4.....	62	1.8	26	7.2	88	2.4
5.....	305	9.0	63	17.4	368	9.8
6.....	535	15.8	75	20.8	610	16.3
7.....	799	23.6	68	18.8	867	23.2
8.....	617	18.2	47	13.0	664	17.7
9.....	348	10.3	30	8.3	378	10.1
10.....	256	7.6	12	3.3	268	7.2
11.....	164	4.8	9	2.5	173	4.6
12.....	110	3.3	9	2.5	119	3.2
13.....	53	1.6	6	1.7	59	1.6
14.....	55	1.6	6	1.7	61	1.6
15.....	31	0.9	1	0.3	32	0.9
16.....	18	0.5	.....	.....	18	0.5
17.....	8	0.2	4	1.1	12	0.3
18.....	9	0.3	.....	.....	9	0.2
19.....	4	0.1	.....	.....	4	0.1
20.....	1	.03	.....	.....	1	.02
21.....	1	.03	.....	.....	1	.02
24.....	2	.06	.....	.....	2	.05
Total...	3,382	99.82	361	100.0	3,743	99.99

Certain facts are indicated by an analysis of Table V.

1. Considering all the children in one group, it appears that practically half the number of pupils in schools for the deaf—48.1 per cent—enter at the age of 8 or above.

2. The median age for entrance is between the seventh and eighth year.

3. The age of entrance for 46.8 per cent of the pupils of day-schools appears to be 6 or under; only 26.7 per cent of the pupils of residential schools are within the same category. Conversely, 53.2 per cent of the pupils of the former enter at 7 or over, whereas the percentage for the corresponding group in the residential schools is 73.3. Evidently the day-schools are getting pupils at a younger age.

4. For the day-schools the age of entrance most favored is 6; for the residential schools, 7.

NUMBER OF YEARS IN SCHOOLS FOR THE HEARING

The information collected on the subject of number of years spent in schools for the hearing indicates that a considerable proportion of deaf pupils have attended such schools before being admitted to schools for the deaf. Thus, of the pupils included in the study, more than 900 had had some time in schools for the hearing. The extent of this previous training is summarized in Table VI.

Approximately one-third of these pupils, according to Table VI, were day-school pupils, although the ratio of all day-school children to the total number included in the survey was not nearly so great, being only about one-seventh. If previous training in schools for the hearing is considered of value to deaf children, then the advantage in this respect lies with the day-schools rather than with the residential schools.

Another interesting fact is that almost one-third the number of pupils who previously had been in schools for the hearing—30.3 per cent—had spent five years or

more in such schools. Of the day-school children who previously had attended schools for the hearing, 37 per cent were there five years or more; for the residential schools the corresponding group comprised 27.1 per cent. Here again the comparison is in favor of the day-schools.

TABLE VI

Number of Years in Schools for the Hearing

Years	Residential Schools		Day-Schools		Total	
	Number of Pupils	Per Cent	Number of Pupils	Per Cent	Number of Pupils	Per Cent
Under 1..	64	10.2	31	10.3	95	10.2
1.....	112	17.9	33	11.0	145	15.6
2.....	94	15.0	49	16.3	143	15.4
3.....	78	12.5	36	11.9	114	12.3
4.....	68	10.9	29	9.6	97	10.5
5.....	52	8.3	35	11.6	87	9.4
6.....	30	4.8	30	10.0	60	6.5
7.....	40	6.4	15	5.0	55	5.9
8.....	30	4.8	15	5.0	45	4.9
9.....	5	0.8	9	3.0	14	1.5
10.....	8	1.3	2	0.7	10	1.1
11.....	3	0.5	5	1.7	8	0.9
12.....	1	0.2	.....	.....	1	0.1
No record.	41	6.5	12	4.0	53	5.7
Total...	626	100.1	301	100.1	927	100.

LENGTH OF KINDERGARTEN TRAINING

More than two-thirds—67.8 per cent—of all the pupils for whom information was obtained were reported as having had no special kindergarten training. This group was larger in the residential schools alone, namely 2,615 out of 3,784 pupils, or 69.1 per cent. In the day-schools studied, 413 out of 681 pupils, or 60.6 per cent, had no such preliminary work.

Of those that did have it, the most frequent group was that which reported one year of kindergarten work; the next most numerous group reported less than one year.

The data on this subject are summarized in Table VII.

TABLE VII

Length of Kindergarten Training

Years	Residential Schools		Day-Schools		Total	
	Number of Pupils	Per Cent	Number of Pupils	Per Cent	Number of Pupils	Per Cent
Less than 1	221	5.8	108	15.9	329	7.4
1.....	609	16.1	121	17.8	730	16.3
1½.....	20	0.5	6	0.9	26	0.6
2.....	149	3.9	25	3.7	174	3.9
2½.....	2	0.05	1	0.1	3	0.07
3.....	111	2.9	2	0.3	113	2.5
3½.....	2	0.05	.....	.....	2	0.04
4.....	37	1.0	1	0.1	38	0.9
4½.....	2	0.05	.....	.....	2	0.04
5.....	7	0.2	1	0.1	8	0.2
5½.....	.....	.....	.....	.....	.....	.....
6.....	1	0.03	.....	.....	1	0.02
Unknown.	8	0.2	3	0.4	11	0.2
None.....	2,615	69.1	413	60.6	3,028	67.8
Total...	3,784	99.88	681	99.9	4,465	99.97

PRELIMINARY MANUAL TRAINING

The extent to which manual training forms a part of the work of pupils in schools for the deaf as an introductory phase of vocational training may be determined by a study of the information submitted by the schools included in the survey.

As indicated in Table VIII, slightly more than one-fourth of the 4,582 pupils included, or 26.6 per cent, were reported as having had this kind of preliminary work. It should be stated, however, that the proportion would be very much greater if only male pupils were considered. Two years of such work seems to be the most common allowance, although an appreciable proportion have more than that.

TABLE VIII

Preliminary Manual Training

Years	Residential Schools		Day-Schools		Total	
	Number of Pupils	Per Cent	Number of Pupils	Per Cent	Number of Pupils	Per Cent
Less than 1	35	0.9	1	0.2	36	0.8
1.....	237	5.9	20	3.6	257	5.6
2.....	382	9.5	54	9.7	436	9.5
3.....	184	4.6	31	5.6	215	4.7
4.....	105	2.6	26	4.7	131	2.9
5.....	62	1.5	18	3.2	80	1.7
6.....	20	0.5	9	1.6	29	0.6
7.....	8	0.2	.....	.....	8	0.2
8.....	6	0.1	1	0.2	7	0.2
Unknown.	13	0.3	9	1.6	22	0.5
None reported..	2,973	73.9	388	69.7	3,361	73.4
Total...	4,025	100.0	557	100.1	4,582	100.1

Oddly enough, despite the fact that the residential schools are said to be better equipped to offer this type of work, the figures here seem to indicate a ratio in favor of the day-schools, 30.4 per cent of the pupils in such schools obtaining preliminary manual training, whereas the corresponding percentage for the residential schools is only 26.1. This advantage is further emphasized by the fact that a greater proportionate number in the day-schools take this work for longer periods than is the case in the residential schools. It may be, though, that this last-named advantage is offset by the more concentrated vocational work offered by the residential schools in following up the preliminary manual training.

METHODS OF INSTRUCTION

The diversification of method of instruction is well illustrated by the information contained in Table IX.

TABLE IX

Methods of Instruction

Method	Residential Schools		Day-Schools		Total	
	No. of Pupils	Per Cent	No. of Pupils	Per Cent	No. of Pupils	Per Cent
Oral	2,360	60.1	546	83.9	2,906	63.5
Oral and auricular	60	1.5	86	13.2	146	3.2
Manual Alphabet	171	4.4	.....	.....	171	3.7
Speech and Manual Alphabet	756	19.3	10	1.5	766	16.7
Manual Alphabet and Sign Language	226	5.8	2	0.3	228	5.0
Speech, Manual Alphabet and Sign Language	316	8.1	7	1.1	323	7.1
Manual and Auricular	2	0.05	.....	.....	2	0.04
Sign Language	5	0.1	.....	.....	5	0.1
Speech and Sign Language	26	0.7	.....	.....	26	0.6
Writing	2	0.05	.....	.....	2	0.04
Total	3,924	100.1	651	100.0	4,575	99.98

It seems quite evident that oral means of instruction dominate in the schools included in the survey. If the auricular work may be included, then two-thirds of the pupils are taught by oral means. The proportion of this group of pupils, however, is greatly increased in the day-schools, where 632 out of 651, or 97.1 per cent, were reported as taught orally.

In addition to the fact that two-thirds of the pupils involved are taught orally, it appears that speech is also employed as a method of instruction along with the manual alphabet in some cases (16.7 per cent), with the manual alphabet and sign language in others (7.1 per cent), and with the sign language in still others (0.6 per cent), making a grand total of 91.1 per cent who are taught by speech methods either wholly or in part.

It is also interesting to note that only a small proportion—12.7 per cent—are taught (even partially) by the

sign language as a medium of instruction. The manual alphabet method, either in whole or in part, is employed for almost one-third, or 32.6 per cent, of the total.

SUBJECTS OF INSTRUCTION

From the great amount of data collected regarding subjects taken up by the pupils of the schools under observation, it is possible to determine at least the outlines of a basic course of study for schools for the deaf. This is particularly true since the schools included in the survey were typical schools, and since the number of pupils involved was large enough to permit the establishment of standards.

At the time of gathering the data it was thought best to limit the study to all pupils 12 years of age and above, particularly as the tests available could not be applied satisfactorily to children below that age. A study of pupils in schools for the deaf under 12, on lines similar to the present study, would prove a supplement of great value.

The present outline of the subjects of instruction in schools for the deaf is based upon an age classification of the pupils rather than upon grades, largely because of the widely divergent interpretations given to the latter in schools for the deaf.

In the lists that appear below, language work includes English, and arithmetic includes number work. In addition, there possibly is some duplication and overlapping, especally in such subjects as history. There is also the possibility that the reports received were not entirely complete, for subjects that are not ordinarily included as part of the academic course, such as physical training, manual training, etc., were noted in some cases, but apparently omitted in many others.

Nevertheless, the information that follows, listing in rank order the various subjects given children of the different ages, may be accepted as illustrating the standard practice with respect to the general curriculum in Ameri-

can schools for the deaf, although it is not here maintained that this is the ideal course of study. The figures indicate the number of pupils for each subject.

Twelve-Year-Old Pupils.[4] — [599 pupils reporting] — Language (573); arithmetic (571); speech (425); speech-reading (422); reading (262); geography (246); writing (141); history (140); drawing (100); spelling (92); physical training (80); hygiene (68); rhythm (49); nature study (45); manual training (40); industrial work (35); grammar (34); composition (33); art (30); civics (26); Christian doctrine (19); current events (17); ethics (16); domestic science (16); physiology (14); sense training (12); language drills (11); auricular training (10).

Thirteen-Year-Old Pupils.—[652 pupils reporting]—Arithmetic (635); language (623); speech (425); speech-reading (411); geography (374); reading (297); history (223); writing (132); drawing (114); hygiene (102); spelling (98); physical training (90); nature study (60); industrial work (50); grammar (47); art (42); current events (41); manual training (41); civics (40); rhythm (37); composition (32); American history (27); physiology (21); language drills (16); ethics (16); domestic science (13); science (13); etymology (12); auricular training (12); health (12); agriculture (11); sense training (10); Christian doctrine (10); manual alphabet (10).

Fourteen-Year-Old Pupils.—[715 pupils reporting]—Arithmetic (686); language (674); geography (489); speech (398); speech-reading (395); reading (318); history (300); drawing (131); hygiene (122); writing (111); spelling (96); grammar (90); physical training (85); nature study (61); current events (59); civics (56); American history (47); art (38); physiology (35); industrial work (35); manual training (32); composition (31); agriculture (22); rhythm (20); domestic science (18); etymology (18); science (15); ethics (14); Bible lessons (12); language drills (11); Christian doctrine (11); sewing (10).

Fifteen-Year-Old Pupils. — [616 pupils reporting] — Arithmetic (593); language (565); geography (459); speech (347); speech-reading (336); history (322); reading (286); hygiene (125); drawing (113); grammar (109); writing (89); current events (81); physical training (70); physiology (66); American history (65); spelling (63); civics (58); nature study (48); industrial art (43); manual training (33); composition (27); art (21); etymology (21); rhythm (20); manual alphabet (18); agriculture (15); science (15); ethics (13).

Sixteen-Year-Old Pupils.—[637 pupils reporting]—Language (607); arithmetic (605); geography (489); history (375); speech (341); speech-reading (338); reading (301); grammar (145); hygiene (128); drawing (124); American history (90); current events (85); physiology (77); writing (77); spelling (70); civics (70); composition (53); nature study (51); physical training (51); agriculture (27); industrial work (27); manual training (26); art (24); science (19); etymology (18); rhythm (16); manual alphabet (15); algebra (12); ethics (11).

[4]For this group as well as for subsequent age groups, only those subjects were listed which were named as taken up by at least 10 pupils.

Seventeen-Year-Old Pupils.—[469 pupils reporting]—Arithmetic (441); language (416); geography (334); history (280); reading (220); speech (207); speech-reading (191); grammar (175); physiology (101); current events (97); American history (94); hygiene (82); drawing (81); civics (70); composition (62); writing (38); physical training (32); nature study (30); spelling (30); algebra (29); English history (20); physics (19); manual training (15); agriculture (13); science (11); industrial training (11).

Eighteen-Year-Old Pupils—[344 pupils reporting]—Language (315); arithmetic (309); geography (225); history (176); reading (170); grammar (165); speech reading (134); speech (131); physiology (81); current events (74); American history (73); civics (68); drawing (62); composition (53); hygiene (47); algebra (43); English history (35); physics (28); nature study (22); writing (18); spelling (17); Latin (15); geometry (11); bookkeeping (11); physical training (10).

Nineteen-Year-Old Pupils.—[281 pupils reporting]—Language (240); arithmetic (236); geography (164); history (148); reading (147); grammar (134); speech (114); speech-reading (108); current events (87); composition (58); algebra (56); civics (52); American history (52); physiology (47); drawing (41); hygiene (40); physics (31); English history (29); Latin (19); physical training (14); geometry (13); nature study (12); bookkeeping (12); agriculture (12); European history (11); writing (10); mechanical drawing (10).

Twenty-Year-Old Pupils.—[215 pupils reporting]—Language (177); arithmetic (170); geography (104); history (95); grammar (92); reading (81); speech (59); speech-reading (58); algebra (42); current events (40); American history (35); drawing (33); civics (32); composition (31); physiology (27); Latin (25); English history (22); hygiene (21); physics (20); geometry (20); European history (13); trigonometry (13); writing (11); business methods (11); mechanical drawing (10).

Pupils Twenty-one Years Old and Above.—[220 pupils reporting]—Language (123); arithmetic (113); grammar (70); geography (69); history (68); reading (59); speech (49); physics (48); speech-reading (46); composition (39); algebra (36); current events (29); civics (27); American history (24); French (23); physiology (22); English history (20); chemistry (20); Latin (19); agriculture (17); drawing (16); geometry (16); rhetoric (15); hygiene (15); mechanical drawing (13); commercial law (12); business methods (12); library work (11); philology (11).

Analysis of the above lists indicates that the course of study in schools for the deaf is built about the following subjects:

Language	Reading	Hygiene	Current events
Arithmetic	Geography	Grammar	Physiology
Speech	History	Composition	
Speech reading	Drawing	Civics	

As they appear within each age group from the

twelfth year on, these subjects may be said to constitute the fundamental basis of what deaf children are taught during their school life.

However, the emphasis given to these studies varies with the different ages. Thus, although language and number work maintain a position of fairly constant relative importance, speech and speech-reading as *special studies* are given less and less emphasis with each succeeding school year. Whereas for the 12-year group these two subjects are surpassed in importance only by language and arithmetic, by the time the last group—that for 21 and over—is reached, they yield precedence to language, arithmetic, grammar, geography, history and reading, and in addition speech-reading falls behind physics. Further, some subjects drop out of the curriculum and are supplanted by others.

NUMBER OF YEARS TAUGHT SPEECH AND LIP-READING

Information regarding number of years the pupils included in the survey were taught speech and lip-reading is given by ages separately for the residential and day-schools in Table X.

TABLE X

Number of Years Taught Speech and Lip-Reading

A.—In Residential Schools

Age	Number of Years Taught Speech and Lip-Reading																			
	None	Less than 1 Yr.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Median
12	5	10	39	56	52	69	77	72	34	14	1	1	..	..	..	..	..	..	..	4
13	9	12	28	44	40	63	60	75	60	36	15	3	..	..	..	..	..	..	..	5
14	8	7	33	43	52	50	67	77	71	51	37	12	3	..	..	..	..	..	..	5
15	5	8	33	37	30	43	42	37	59	55	52	27	8	2	2	..	..	..	..	6
16	12	6	22	41	34	30	38	40	54	63	57	44	36	4	3	..	..	..	..	7
17	16	2	19	22	21	22	32	22	32	31	44	50	33	22	5	1	..	..	..	7
18	9	1	9	23	14	13	22	26	15	23	23	37	32	23	19	3	..	..	..	8
19	6	1	7	13	16	10	13	12	11	20	17	20	31	23	16	15	4	..	..	9
20	11	3	8	12	18	13	11	7	12	19	11	17	8	14	5	3	1	..	..	7
21+	5	2	8	16	9	10	13	16	3	11	11	11	15	7	8	6	2	4	1	6½

B.—In Day-Schools

Age	Number of Years Taught Speech and Lip-Reading																			
	None	Less than 1 Yr.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Median
12	3	9	5	13	16	12	19	23	12	5	1	..	..	..	..	..	..	..	..	5
13	4	11	12	13	8	12	18	17	20	7	12	..	..	..	..	..	..	..	..	5
14	1	2	6	13	10	8	10	13	21	16	14	5	..	..	..	..	..	..	..	6
15	..	6	3	14	6	8	11	9	13	7	11	11	2	..	1	..	..	..	..	6
16	3	5	4	8	7	5	7	5	6	5	10	12	1	5	..	..	..	..	..	6
17	..	1	2	2	1	..	1	1	6	1	5	6	8	5	1	3	..	..	..	10
18	..	....	..	1	..	1	1	..	1	2	..	1	2	2	3	..	..	..	..	10½
19	1	....	..	2	1	1	1	2	..	..	1	1	2	..	1	1	..	..	..	6
20	..	....	..	2	1	..	..	..	..	1	..	..	..	1	..	..	1	..	..	5½
21+	..	....	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	3

The median or typical practice for 12-year-old residential school children is represented by those who had 4 years of speech and lip-reading; for the 13 and 14-year-old groups, 5 years of such work is the median. Thereafter, beginning with the 15-year-olds and ending with the group 21 years old and older, the extent of speech work for the succeeding ages was 6, 7, 7, 8, 9, 7, and 6½, respectively.

Up to and including the 19th year, the number of years of speech work completed increased with each succeeding age group. The falling off for ages 20 and 21+ may be explained by the possibility that many of the brighter children who could benefit by added speech training had completed their school work and left before having reached these ages.

For the day-schools the extent of this work—as represented by the medians for the respective ages—does not vary much for the groups from 12 to 16 years of age, inclusive. Also, although the medians here rise to 10 and 10½ years of speech work for the 17 and 18-year-old groups, respectively, there is a decided falling off for the three remaining age groups.

TRADES LEARNED IN SCHOOL

For the pupils in both the residential and day-schools studied, a total enrollment of 7,056 was reported for the various trades taught, some of the pupils taking more than one. The relative importance of the respective industries may be determined by arranging them, as is done in Table XI, in rank order according to the number of pupils in each.

TABLE XI

Industries Taught

Industry	Number of Pupils			Industry	Number of Pupils		
	Residential	Day	Total		Residential	Day	Total
None reported	768	347	1,115	Beading	.....	25	25
Domestic Art (includes sewing)	1,248	157	1,405	Shirt Making	24	.....	24
Domestic Science (includes cooking)	893	122	1,015	Basketry	19	3	22
Woodwork (includes cabinet work and carpentry)	749	71	820	Gardening	19	.....	19
Printing (includes linotyping)	577	30	607	Barbering	17	.....	17
Dressmaking	292	.....	292	Typewriting	13	.....	13
Shoe work	281	.....	281	Weaving	3	10	13
Tailoring	176	1	177	Industrial Drawing	.....	12	12
Millinery	119	47	166	Home Economics	10	.....	10
Painting	101	6	107	Leather Work	9	.....	9
Sign painting (includes stencil work and hand lettering)	27	78	105	Bricklaying	9	.....	9
Ironing	97	.....	97	Harness Making	6	.....	6
Farming	93	.....	93	Mechanical Drawing	6	.....	6
Housework	89	.....	89	Bookbinding	6	.....	6
Laundering	81	.....	81	Presswork	5	.....	5
Manual Training	37	33	70	Photography	4	.....	4
Flower Making	.....	71	71	Dairying	4	.....	4
Art	62	.....	62	Chair Caning	1	2	3
Baking	61	.....	61	Machine-shop Work	3	.....	3
Embroidery	58	.....	58	Drafting	2	.....	2
Drawing	29	3	32	Horticulture	2	.....	2
Sloyd	23	5	28	Poultry Farming	2	.....	2
				Auto Repairing	2	.....	2
				Cleaning and Pressing	2	.....	2
				Architectural Drawing	1	.....	1
				Mattress Making	1	.....	1
				Office Work	1	.....	1
				Plumbing	1	.....	1
				Total	6,033	1,023	7,056

It might be of interest, in order to determine the emphasis placed upon the various trades by the two main types of schools, to give here the ten trades most frequently chosen in each case, with percentage of the total number choosing the respective occupations. This comparison is shown in Table XII.

TABLE XII

Leading Industries Taught

Residential Schools			Day-Schools		
Industry	No. of Pupils	Per Cent	Industry	No. of Pupils	Per Cent
Domes ic Art....	1,248	23.7	Domestic Art	157	23.2
Domestic Science.	893	17.0	Domestic Science..	122	18.0
Woodwork.....	749	14.2	Sign Painting.....	78	11.5
Printing.....	577	11.0	Woodwork.....	71	10.5
Dressmaking.....	292	5.5	Flower Making....	71	10.5
Shoe Work.....	281	5.3	Millinery.....	47	7.0
Tailoring.....	176	3.3	Manual Training...	33	4.9
Millinery.....	119	2.3	Printing.....	30	4.4
Painting.....	101	1.9	Beading.....	25	3.7
Ironing.....	97	1.8	Industrial Drawing.	12	1.8

LANGUAGE MAINLY USED AT HOME

The linguistic background at home for the great majority of the pupils included in the survey is English, such being the report for 3,493, or 80.9 per cent, of 4,317 children for whom information was given as to the language mainly relied upon in their homes.

The information on this subject is presented more completely in Table XIII.

Considering the two types of schools separately, it is evident that a greater proportion—more than four-fifths, or 83.4 per cent—of the pupils in the residential schools come from homes where English is the principal means of communication. In the day-schools only two-thirds, or 67.1 per cent, have this advantage.

In the residential schools, for those pupils from homes where English is not the chief tongue, the five languages relied upon mainly are, in order, Italian, English and Russian, Yiddish, German, and English and Italian, whereas for the day-schools they are Italian, Yiddish, English and Yiddish, English and Italian, and Polish.

TABLE XIII
Language Mainly Used At Home

Language	Residential Schools		Day-Schools		Total	
	No. of Pupils	Per Cent	No. of Pupils	Per Cent	No. of Pupils	Per Cent
English	3,055	83.4	438	67.1	3,493	80.9
Italian	146	4.0	59	9.0	205	4.7
Yiddish	76	2.1	46	7.0	122	2.8
English and Russian	87	2.4	1	0.2	88	2.0
English and Italian	47	1.3	20	3.1	67	1.6
English and Yiddish	29	0.8	35	5.4	64	1.5
Polish	46	1.3	14	2.1	60	1.4
German	50	1.4	2	0.3	52	1.2
English and German	19	0.5	6	0.9	25	0.6
Spanish	17	0.5	1	0.2	18	0.4
Russian	14	0.4	3	0.5	17	0.4
Bohemian	12	0.3	5	0.8	17	0.4
English and Polish	11	0.3	5	0.8	16	0.4
Hungarian	5	0.1	3	0.5	8	0.2
Others	50	1.4	15	2.3	65	1.5
Total	3,664	100.2	653	100.2	4,317	100.0

HOMES OF PUPILS

In the classification of homes of pupils, three types were recognized, namely, city, town, and country—the second of these including village, suburban town and edge of city. Table XIV epitomizes this information.

TABLE XIV
Homes of Pupils

Location	Residential Schools		Day-Schools		Total	
	Number of Pupils	Per Cent	Number of Pupils	Per Cent	Number of Pupils	Per Cent
City	1,978	50.1	636	94.1	2,614	56.5
Town	392	9.9	12	1.8	404	8.7
Country	1,577	40.0	28	4.1	1,605	34.7
Total	3,947	100.0	676	100.0	4,623	99.9

More than half the children in the schools studied—56.5 per cent—apparently come from city homes; only a little more than one-third, or 34.7 per cent, live in the country.

As was to be expected, most of the pupils in the day-schools are city children—94.1 per cent. In the residential schools only half come from city homes; 40 per cent are from the country. The comparison indicates on the whole a somewhat different type of pupil for the residential school so far as home background is concerned.

PARENTS—HEARING OR DEAF

According to the information obtained, only a slight proportion of the children in the schools observed are the offspring of deaf parents, there being but 2.5 per cent of the total with both parents deaf and 0.6 with only one parent deaf. It may also be noted from Table XV, which gives this information, that the proportion of children with deaf parents—either one or both—is greater in the residential schools—3.4 per cent of the total as against only 1.0 per cent for the day-schools.

TABLE XV

Parentage

Parents	Residential Schools		Day-Schools		Total	
	No. of Pupils	Per Cent	No. of Pupils	Per Cent	No. of Pupils	Per Cent
Both parents hearing	3,750	96.6	675	99.0	4,425	96.9
Both parents deaf	107	2.8	5	0.7	112	2.5
Father deaf, mother hearing	14	0.4	1	0.1	15	0.3
Father hearing, mother deaf	12	0.3	1	0.1	13	0.3
Total	3,883	100.1	682	99.9	4,565	100.0

OCCUPATIONS OF PARENTS

Farming is the leading occupation of fathers of deaf children. This is the field of work reported by 1,182, or 29.6 per cent, out of a total of 3,991 children for whom information was obtained. This occupation is more pronounced if the residential schools alone are studied, for only a negligible number of cases are reported from the day-schools. Of the children in the residential schools included in the survey, more than one-third, or 34.4 per cent, gave this as the parental means of livelihood.

TABLE XVI

Occupation of Fathers

Occupation	Number of Children in			Occupation	Number of Children in		
	Residential Schl.	Day-Schl.	Total		Residential Schl.	Day-Schl.	Total
Farmer	1,175	7	1,182	Watchman	8	6	14
Laborer	493	69	562	Longshoreman	11	3	14
Skilled Laborer	396	132	528	Policeman	9	5	14
Carpenter	127	33	160	Mail Carrier	11	.....	11
Miner	108	.....	108	Sailor	10	1	11
Tailor	55	43	98	Teacher	9	2	11
Salesman	66	28	94	Section Hand	10	.....	10
Merchant	64	28	92	Plumber	9	1	10
Clerk	54	20	74	Lawyer	9	1	10
Engineer	52	14	66	Porter	8	2	10
Railroad-man	55	9	64	Bookkeeper	7	3	10
Machinist	47	16	63	Janitor	7	3	10
Grocer	43	15	58	Laundryman	7	3	10
Painter	38	14	52	Saloonkeeper	8	1	9
Driver	33	15	48	Manager of Restaurant	4	5	9
Mechanic	34	5	39	Cook	5	3	8
Minister	29	4	33	Gardener	6	2	8
Conductor	27	4	31	Telegrapher	6	1	7
Peddler	29	.....	29	Expressman	5	2	7
Mill Operator	28	1	29	Art Worker	4	2	6
Electrician	18	9	27	Manufacturer	4	2	6
Dealer	17	10	27	Agent	1	5	6
Blacksmith	25	1	26	Jeweler	5	.....	5
Foreman	22	3	25	Florist	5	.....	5
Insurance Man	19	4	23	Confectioner	4	1	5
Manager	17	6	23	Musician	4	1	5
Rancher	21	.....	21	Draftsman	4	1	5
Printer	18	2	20	Supervisor	3	2	5
Doctor	16	2	18	All Others	70	16	86
Fireman	12	3	15				
Proprietor	12	3	15	Total	3,417	544	3,991
Lumberman	14	.....	14				

The next most frequent group was that of laborers, with 562 cases, or 14.1 per cent of the total, followed by

the division including skilled laborers, with 528 persons, or 13.2 per cent of the total.

Table XVI summarizes the information obtained as to occupation of fathers, the various lines of work being given in order of frequency. It will be noted that there is some lack of distinctness as to names of occupations; for instance, the group of "skilled laborers" does not include a number of occupations which are listed separately by name, but which could be included within the general group. The same lack of differentiation is true of the group of "laborers."

The mothers of deaf children are in the main occupied as housewives, 2,684 out of 3,013, or 89.1 per cent, being so reported.

The data obtained on this are given in Table XVII.

TABLE XVII

Occupation of Mothers

Occupation	Number of Children in		
	Residential Schools	Day-Schools	Total
Housewife	2,242	442	2,684
Factory Worker	39	16	55
Farmer	34	.....	34
Clerk	20	12	32
Laundress	25	2	27
Dressmaker	19	7	26
Waitress	12	4	16
Nurse	11	3	14
Saleslady	11	3	14
Teacher	9	4	13
Skilled Laborer	8	4	12
Cook	7	1	8
Office Worker	6	2	8
Odd Job Worker	6	1	7
Boardinghouse Keeper	5	1	6
Maid	5	1	6
Hotel Keeper	5	.....	5
Janitoress	2	3	5
All Others	34	7	41
Total	2,500	513	3,013

NATIVITY OF PARENTS

A little more than three-fifths—61.9 per cent—of the pupils studied are of native-born parentage.

However, a study of the figures for the two different types of schools reveals a striking difference. In the residential schools, fully two-thirds—67.9 per cent—of the children are of native stock, whereas the parents of less than one-third the pupils in the day-schools—30.4 per cent—were born in the United States. This difference may be accounted for by the fact that most of the day-schools are situated in large cities that attract an immigrant population. The average for the residential schools, also, is probably affected by the fact that in a number of the southern residential schools included in the survey there was very little or no influx of the foreign population.

Table XVIII gives in summary the data respecting nativity of parents.

TABLE XVIII

Nativity of Parents

Nativity	Residential Schools		Day-Schools		Total	
	No. of Pupils	Per Cent	No. of Pupils	Per Cent	No. of Pupils	Per Cent
Both parents native	2,315	67.9	195	30.4	2,510	61.9
One parent foreign-born	211	6.2	79	12.3	290	7.2
Both parents foreign-born	885	25.9	367	57.3	1,252	30.9
Total	3,411	100.0	641	100.0	4,052	100.0

A fairly good idea of the racial stock of parents when both are foreign-born may be obtained from a study of data concerning birthplace, such as given in Table XIX.

TABLE XIX

Birthplace of Parents When Both Are Foreign-Born

Birthplace	Number of Children in		
	Residential Schools	Day-Schools	Total
Italy	220	78	298
Russia	179	76	255
Austria-Hungary	125	38	163
Norway	55	3	58
Germany	44	13	57
Poland	8	43	51
Ireland	30	19	49
Sweden	19	13	32
England	13	4	17
Canada	10	7	17
Czechoslovakia	12	5	17
Roumania	10	6	16
Scotland	7	7	14
Finland	12	.....	12
Mexico	11	.....	11
Austria-Hungary-Russia	11	9	20
Spain	9	.....	9
Bohemia	6	3	9
Lithuania	9	.....	9
Holland	5	1	6
Denmark	4	1	5
Syria	2	3	5
Germany-Hungary	5	.....	5
Turkey	5	.....	5
All Others	74	38	112
Total	885	367	1,252

Perhaps a somewhat different racial composition is revealed for those deaf children who reported only one parent as foreign-born. For these cases the birthplace is indicated in Table XX.

TABLE XX

Birthplace of Parents When One Is Foreign-Born

Birthplace of Foreign-Born Parent	Number of Children in		
	Residential Schools	Day-Schools	Total
Germany	55	17	72
England	35	6	41
Ireland	18	8	26
Canada	16	9	25
Italy	11	8	19
Russia	9	5	14
Austria-Hungary	10	4	14
Scotland	9	5	14
Sweden	8	4	12
Norway	8	3	11
Poland	4	2	6
Denmark	4	1	5
Czechoslovakia	4	1	5
Switzerland	4	.....	4
Holland	3	.....	3
France	3	.....	3
New South Wales	2	.....	2
All Others	8	6	14
Total	211	79	290

RELATIONSHIP OF PARENTS

Only a small proportion—7.6 per cent—of the children included in the survey indicated a blood relationship between parents, as shown by Table XXI.

TABLE XXI

Parents Related by Blood

Parents Related	Residential Schools		Day-Schools		Total	
	Number of Pupils	Per Cent	Number of Pupils	Per Cent	Number of Pupils	Per Cent
Yes.....	277	7.4	55	9.2	332	7.6
No.....	3,463	92.6	546	90.8	4,009	92.4
Total...	3,740	100.0	601	100.0	4,341	100.0

However, although the general ratio with respect to consanguinity in the parents is rather low, there is a startling rise in percentage when a number of individual schools are considered. Thus, in one school in a Middle Atlantic state, 21.8 per cent of the pupils are the offspring of consanguineous marriages; in a school in an East South Central state the percentage is 22.9, and in two other schools in South Atlantic states, 24.2 and 24.4, respectively. In one day-school in an East North Central state the proportion is 25.7 per cent. The percentage is above 10 in 7 of 28 residential schools and in 4 of the 13 day-schools included in the survey, the highest being 25.7 per cent. Two of the residential schools and 5 of the day-schools reported no case of kinship between parents.

The distribution according to consanguinity of parents may be shown by geographical divisions, as given in Table XXII, including both residential and day-schools. In this, the greatest frequency, 15.8 per cent, is found

TABLE XXII

Consanguinity of Parents by Geographical Divisions

Geographical Division	Total Number Children	Number whose Parents are Related by Blood	Per Cent
New England	138	11	8.0
Middle Atlantic	1,432	102	7.1
East North Central	445	22	4.9
West North Central	506	24	4.7
South Atlantic	526	83	15.8
East South Central	397	57	14.4
West South Central	440	20	4.5
Mountain	174	5	2.9
Pacific	283	8	2.8
Total for All Divisions.	4,341	332	7.6

in the South Atlantic division, and least, 2.8 per cent, in the Pacific division. Why there should be such marked differences between sections of the country is a matter for interesting sociological research.

CHAPTER XII

RESIDUAL HEARING OF CHILDREN IN SCHOOLS FOR THE DEAF

A phase of the survey arousing especial interest was the testing of the hearing of children in schools for the deaf by means of an audiometric device. The carrying out of such measurements on so extensive a scale was made possible through the kindness and generosity of Mr. J. Henry Wood, of the Western Electric Company, who not only placed at the disposal of the National Research Council two 3-A audiometers for the entire course of the survey, but also had experts do the testing without cost in four of the residential schools and in one of the day-schools.

In all the other schools visited by the field agents, the latter themselves conducted the tests when the school was small in size, or had this done in schools where there were large numbers of children by teachers or officers selected by the managing officer for their ability to decide quickly and accurately. In the latter schools the field agents first explained the procedure to those who were to do the testing, then had them test some 15 or 20 children, correcting their method and checking up on results. All doubtful cases were referred to the field agents, for in many schools there were some children whose responses could not be relied upon. Such children were later re-tested by the fields agents, all doubtful results being discarded.

These tests were made individually in the quietest room available with a group of from 10 to 15 pupils present at a time. It was found advisable to begin with the older classes, for the news of what was being done soon spread throughout the school and these older children were able to convince the younger boys and girls that there was nothing painful in having one's hearing measured. Practice with older children, too, gave the teacher in charge

the necessary confidence and skill in operating the audiometer before taking on the younger groups.

When the children were assembled, the field agent explained what had to be done and gave a demonstration, frequently testing the hearing of his assistant and himself. The hearing in each ear was tested some eight or ten times before a decision was reached, and every precaution was taken to prevent error in results.

The principles upon which the 3-A audiometer operates are given by Dr. Edwin L. La Crosse, in a paper on "The Method of Testing Hearing and the Standardization of Terms as Applied to the Training of Residual Hearing," read at the twenty-third meeting of the Convention of American Instructors of the Deaf, Belleville, Ont., July, 1923, as follows:

> The generator is of the vibratory reed type. It gives a compound tone of variable intensity. An analysis of this tone shows that it has frequency components throughout the important range of speech frequency, that is, from 200 to 2,000. The zero hearing point is taken as the average intensity where one feels the sound wave. The 100 per cent hearing point is taken as the average threshold intensity for people who are known to have normal hearing. The range of intensities between these two points is divided into 100 equal loudness stops.

A further description of the apparatus used is given in the following excerpt from a paper by Dr. Harvey Fletcher on "Some New Methods and Apparatus for Testing the Acuity of Hearing and Their Relation to the Speech and Tuning Fork Methods," published in the *Laryngoscope,* July, 1925 (Vol. XXXV, No. 7):

> The 3-A audiometer has been developed to take the place of such tests as the watch tick tests, the acoumeter tests, or those designed to make a very quick test of the general hearing level. In this instrument a tone having components throughout the entire speech frequency range is electrically generated and delivered to a receiver to be held on the ear of the patient. The volume of the tone is controlled by the same attenuator unit as used in the other audiometers. It reads directly either in sensation units loss or per cent hearing loss, since it was found for this tone

that there were just 100 S U between the threshold of hearing and the threshold of feeling for the normal ear. This instrument has been found to be particularly useful in schools for the deaf. It enables the teachers to grade the degree of hearing of the child very quickly, which aids them in deciding upon the kind of methods to be used in teaching him. It is also useful in making a quick test of the hearing of large groups when they are to be tested one at a time.

The purpose of the test was to find the faintest tone that the individual being examined could hear. When a child being tested indicated that the test tone was barely audible with the pointer at 40, this would mean that his loss of hearing was 40 per cent, that is, his hearing was 60 per cent normal. If the child heard the test tone at zero or below zero, that would be an indication of no loss of hearing from the normal, hence his auditory power was at least 100. If on the other hand the pointer stood at 100, the loss was total, showing a zero hearing ability, a point where the ear experiences a tactile and not an auditory impression. The positive figure of residual hearing, that is, the percentage of normal auditory ability, is the one used throughout this report.

As the audiometer used was not of the silent type, it was impossible to deaden the sound made by the vibratory coil, even though the latter was placed in a closet or outside the room where the tests were being made. Where the children had but a small amount of hearing, 45 per cent or less, this removal of the vibratory coil from the room was unnecessary, but it is likely that the figures given of amounts of hearing from zero to 45 per cent are more accurate than those from 45 to 100 per cent. It seemed difficult for many of the children of the latter type, unaccustomed to differentiating between sounds, to distinguish between the noise of the vibratory coil and that of the test sound. Everything possible was done to muffle the sound of the vibratory coil. When necessary the child put a wad of absorbent cotton or a handkerchief over the ear not being tested and was told to hold

his hand to that ear to shut out as much extraneous sound as possible.

Table I gives the classification, according to age, of the children tested with the audiometer—exclusive of those in schools for the colored deaf. The first column to the left represents the ranges of hearing, from zero to 100. The column of particular significance is the last one to the right which presents the total number for all ages for the respective degrees of hearing.

TABLE I

Classification of the Measured Amount of Hearing of All White Children Tested Who Were Twelve Years of Age and Over.

Percentage of Hearing	Number of Children According to Age										All ages
	12	13	14	15	16	17	18	19	20	21+	
0	9	12	15	13	18	16	13	17	10	13	136
1- 5	32	37	19	26	36	20	18	21	11	20	240
6- 10	35	54	53	44	46	40	24	29	15	21	361
11- 15	54	61	64	48	47	53	27	34	19	18	425
16- 20	79	97	90	83	75	65	42	31	28	17	607
21- 25	80	75	83	92	85	60	47	35	34	23	614
26- 30	54	61	82	50	63	41	32	28	15	22	448
31- 35	49	42	56	48	49	42	37	19	15	13	370
36- 40	38	33	55	37	47	28	33	14	16	12	313
41- 45	31	37	41	46	41	28	21	12	10	10	277
46- 50	18	38	47	21	32	22	17	14	16	9	234
51- 55	26	18	27	31	19	16	9	10	9	9	174
56- 60	23	14	22	19	15	13	8	3	8	3	128
61- 65	20	17	14	13	21	7	3	7	1	2	105
66- 70	7	13	12	9	8	6	5	4	....	....	64
71- 75	7	5	8	8	6	1	1	1	....	....	37
76- 80	4	7	6	4	3	1	3	....	....	2	30
81- 85	4	5	4	6	3	2	1	....	....	....	25
86- 90	1	4	5	2	3	1	....	....	....	....	16
91- 95	....	1	1	2	3	....	....	....	....	....	7
96-100	....	2	....	2	2	....	1	....	....	....	7
Total	571	633	704	604	622	462	342	279	207	194	4618

The general median or central tendency for the respective age groups, as well as for the total number in the table given above seems to be represented by those children who possess from 21 to 25 per cent hearing, as measured by the audiometer.

The same data in another and perhaps more practical form are given in Table II. Here the classification shows

within each age group the percentage, in place of the numerical distribution, of the children falling within the different hearing levels as measured by the audiometer, namely, from zero to 100. The final column also summarizes the same information for all the ages.

TABLE II

Percentage Classification of the Measured Amount of Hearing of All White Children Tested Who Were Twelve Years of Age and Over

Percentage of Hearing	Percentage of Total Number of Children According to Age										All Ages
	12	13	14	15	16	17	18	19	20	21+	
0	1.57	1.89	2.13	2.15	2.89	3.46	3.8	6.09	4.83	6.7	2.94
1- 5	5.6	5.84	2.7	4.3	5.78	4.32	5.26	7.52	5.31	10.3	5.19
6- 10	6.12	8.53	7.52	7.28	7.39	8.65	7.01	10.39	7.24	10.82	7.81
11- 15	9.45	9.63	9.09	7.94	7.55	11.47	7.89	12.18	9.17	9.27	9.2
16- 20	13.83	15.32	12.78	13.74	12.05	14.07	12.28	11.11	13.52	8.76	13.14
21- 25	14.01	11.84	11.79	15.23	13.66	12.98	13.74	12.54	16.42	11.85	13.29
26- 30	9.45	9.63	11.64	8.27	10.12	8.87	9.35	10.03	7.24	11.34	9.70
31- 35	8.58	6.63	7.95	7.94	7.87	9.09	10.81	6.81	7.24	6.7	8.01
36- 40	6.65	5.21	7.81	6.12	7.55	6.06	9.64	5.01	7.72	6.18	6.77
41- 45	5.42	5.84	5.82	7.61	6.59	6.06	6.14	4.3	4.83	5.15	5.99
46- 50	3.15	6.	6.67	3.47	5.14	4.76	4.97	5.01	7.72	4.63	5.06
51- 55	4.55	2.84	3.83	5.13	3.05	3.46	2.63	3.58	4.34	4.63	3.76
56- 60	4.02	2.21	3.12	3.14	2.41	2.81	2.33	1.07	3.86	1.54	2.77
61- 65	3.5	2.68	1.98	2.15	3.37	1.51	.87	2.5	.48	1.03	2.27
66- 70	1.22	2.05	1.74	1.49	1.28	1.3	1.46	1.43	.....	.....	1.38
71- 75	1.22	.79	1.13	1.32	.96	.21	.29	.35	.....	.....	.8
76- 80	.7	1.1	.85	.66	.48	.21	.87	.....	.....	1.03	.64
81- 85	.7	.79	.56	.99	.48	.43	.29	.....	.....	.....	.54
86- 90	.17	.63	.71	.33	.48	.21	.....	.....	.....	.....	.34
91- 95	.....	.15	.14	.33	.48	.....	.....	.....	.....	.....	.15
96-100	.....	.31	.....	.33	.32	.....	.29	.....	.....	.....	.15

It may be noted from the foregoing tables that the number of children who are totally deaf, that is, with no trace of auditory sensitivity, as determined by the audiometer test, constitute but a small proportion of pupils in schools for the deaf in the United States, there being only 136 such instances out of 4,618, or 2.94 per cent. It is quite probable, however, that in the case of a number of the younger children, feeling the vibrations when the

audiometer indicated 5 or 10 per cent was mistaken for an auditory impression and, despite the best efforts of the examiners, so reported. If the test could have been stripped of this uncertainty, it is likely that the number of children registered in the zero column of hearing would be greater.

An additional fact disclosed by these tables is that there seems to be in the lower age groups, between 12 and 16 years, inclusive, a greater proportion of children with degrees of hearing ability in the upper ranges—between 50 and 100—as compared with those in the older groups. Conversely, within the upper age groups, between 17 and over, there seems to be a comparatively greater proportion of children who are included within the lower hearing levels—between 0 and 50. This may point to the possibility that children with the lesser degrees of hearing remain in school longer, taking more time to complete the course of study. This condition is better expressed in the subjoined table:

TABLE III

Percentage Distribution for Each Age Group

Degree of Hearing	Ages										All Ages
	12	13	14	15	16	17	18	19	20	21+	
0- 50	83.83	86.36	85.90	84.05	86.59	89.79	90.80	90.99	91.24	91.70	87.10
51-100	16.08	13.55	14.06	15.87	13.31	10.14	9.03	8.93	8.68	8.23	12.80
Total	99.91	99.91	99.96	99.92	99.90	99.93	99.92	99.92	99.92	99.93	99.90

A distribution was also obtained for those children tested for their hearing in schools for the colored deaf and is here given in Table IV. The general hearing level, or median, for children in such schools seems to lie between 16 and 20, as contrasted with a median of 21 to 25 for children in schools other than these. The proportion of those with no auditory power at all, as determined by the audiometer, is here greater than for white chil-

dren, the percentage being 13.66, as against 2.94 for the latter class. There is also a more marked preponderance among the lower hearing levels in all ages. However, owing to the small number of these children examined, in addition to all the other possibilities of unreliability, the results in this instance are probably not so conclusive.

TABLE IV

Classification of the Measured Amount of Hearing of Children Twelve Years of Age and Over, Tested in Schools for the Colored Deaf

Percentage of Hearing	Number of Children According to Age										All Ages
	12	13	14	15	16	17	18	19	20	21+	
0	.....	5	4	2	2	4	1	.....	2	2	22
1- 5	.....	1	.....	1	3	4	2	.....	2	2	15
6- 10	.....	.....	3	2	3	5	4	.....	2	3	22
11- 15	2	2	2	2	1	1	2	2	1	1	16
16- 20	.....	1	2	.....	4	3	1	1	3	2	17
21- 25	.....	3	1	1	3	2	1	3	1	3	18
26- 30	1	2	4	1	.....	.....	1	1	.....	2	12
31- 35	.....	2	.....	1	4	1	3	1	.....	.....	12
36- 40	.....	2	3	2	.....	.....	1	.....	.....	.....	8
41- 45	1	3	.....	.....	.....	.....	.....	.....	2	.....	6
46- 50	1	.....	1	.....	.....	1	.....	.....	.....	.....	3
51- 55	.....	.....	4	.....	1	.....	1	.....	.....	.....	6
56- 60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
61- 65	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
66- 70	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
71- 75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
76- 80	.....	.....	.....	.....	1	.....	1	.....	.....	.....	2
81- 85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
86- 90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
91- 95	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
96-100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	5	21	25	12	23	21	18	8	13	15	161

Median Degree of Hearing = 16-20

No percentage distribution is attempted for the classification as given in Table IV of the children in schools for the colored deaf, as the number within each age group is too small to make such a classification significant.

CLASSIFICATION ACCORDING TO SCHOOLS

Further analysis of the results obtained by the audiometer test reveals important differences in the nature of the pupilage of day-schools as compared with that of residential schools.

In order to make this clear, the distribution by number of the measured amount of hearing of children in day-schools is first given in Table V, each school being denoted by a number. Exclusive of the children tested in the one school for hard-of-hearing children included in the survey, the total number considered is 656. For this group the median degree of hearing in audiometer percentage is 31 to 35, whereas for all the children tested the median is 21 to 25. Only 7 out of 625 cases in the day-schools were registered as having no hearing whatever, this being 1.06 per cent of the total, as against a per cent of 2.94 for the same group among all the children tested for their hearing.

In the school for hard-of-hearing children already mentioned, only 9 pupils were tested for their hearing. Of these 1 showed possession of 41 to 45 per cent hearing, 2 from 46 to 50, 2 from 66 to 70, 1 from 76 to 80, 2 from 81 to 85, and 1 from 91 to 95 per cent.

The distribution for the residential schools is given in Table VI, comprising a total of 3,953 children, each school being designated by a number. The median degree of hearing in such schools, it appears, is between 21 and 25 per cent, an average that is lower than that which seems to prevail in day-schools for deaf children, where the median degree of hearing is between 31 and 35 per cent.

TABLE V

Classification of the Measured Amount of Hearing of All Day-School Children Tested Who Were Twelve Years of Age and Over

Degree of Hearing	School													All	Per cent of Total
	1	2	3	4	5	6	7	8	9	10	11	12	13		
0	.....	.....	3	.....	.....	.....	1	.....	.....	1	1	1	.....	7	1.06
1- 5	6	2	2	.....	3	1	7	4	.....	5	2	7	.....	39	5.94
6- 10	2	3	2	1	4	3	4	4	3	6	1	10	.....	43	6.55
11- 15	5	3	7	2	5	1	3	2	.....	6	1	12	1	48	7.31
16- 20	2	4	4	1	6	2	9	2	5	9	2	25	.....	71	10.82
21- 25	6	3	4	1	4	2	4	4	3	8	1	22	1	63	9.6
26- 30	1	4	6	.....	4	.....	9	.....	3	3	2	13	.....	45	6.86
31- 35	9	2	5	.....	.....	2	3	1	2	9	.....	12	1	46	7.01
36- 40	4	1	10	.....	1	1	5	.....	2	2	.....	7	1	34	5.18
41- 45	2	.....	2	3	2	.....	5	1	6	2	.....	19	1	43	6.55
46- 50	2	2	5	.....	2	1	6	3	1	3	.....	11	.....	36	5.48
51- 55	4	2	2	1	.....	5	1	.....	5	5	.....	14	1	40	6.09
56- 60	3	2	.....	.....	.....	1	5	2	1	6	1	13	.....	34	5.18
61- 65	5	.....	4	1	.....	5	9	3	2	4	1	10	.....	44	6.7
66- 70	.....	2	4	.....	.....	2	3	5	1	.....	.....	10	.....	27	4.11
71- 75	.....	.....	1	.....	1	.....	.....	.....	1	2	.....	8	.....	13	1.98
76- 80	.....	.....	1	.....	.....	.....	3	.....	1	.....	.....	5	.....	10	1.52
81- 85	.....	.....	3	.....	.....	1	.....	.....	1	.....	.....	3	.....	8	1.21
86- 90	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	2	.....	3	.45
91- 95	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2	.3
96-100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	51	30	65	10	32	27	77	31	38	71	12	206	6	656	
Medians	31–35	25	31–35	35	16–20	51–55	31–35	21–25	41–45	26–30	16–20	36–40	35	31–35	.....

TABLE VI

Classification of the Measured Amount of Hearing of All Residential School Children Tested Who Were Twelve Years of Age and Over

Degree of Hearing	Schools													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
0	1	3	10	.....	4	4	9	.....	.....	8	1	4	13	10
1- 5	15	6	.....	3	1	5	11	21	.....	5	1	5	10	19
6- 10	10	6	16	9	9	17	10	11	.....	18	9	7	20	26
11- 15	18	11	11	7	7	24	11	11	2	22	16	13	24	27
16- 20	16	11	19	15	11	25	13	20	.....	25	16	11	26	46
21- 25	23	14	22	12	11	31	17	15	1	19	18	13	30	42
26- 30	16	9	13	12	7	21	6	17	2	27	22	5	16	29
31- 35	9	3	8	10	7	5	6	13	6	20	9	7	15	34
36- 40	11	7	11	6	5	9	6	11	4	18	10	2	7	9
41- 45	4	5	10	6	12	9	8	17	.....	16	8	3	11	12
46- 50	8	2	10	4	3	6	5	10	2	15	2	4	9	19
51- 55	6	.....	5	3	7	6	5	6	1	5	5	2	8	9
56- 60	4	2	1	3	1	4	5	9	3	4	2	.....	3	4
61- 65	1	1	.....	4	1	5	1	4	1	.....	2	1	.....	4
66- 70	.....	.....	1	2	3	5	1	5	1	2	1	.....	1	1
71- 75	.....	1	2	.....	3	2	.....	3	2	.....	.....	1	.....	.....
76- 80	.....	1	2	.....	1	2	1	.....	.....	1	.....	.....	.....	2
81- 85	1	.....	.....	.....	1	5	.....	.....	1	.....	.....	.....	1	.....
86- 90	.....	.....	.....	.....	.....	1	.....	.....	2	.....	.....	.....	.....	1
91- 95	.....	.....	1	.....	.....	2	.....	.....	.....	1	.....	.....	.....	1
96-100	.....	1	1	.....	.....	3	.....	.....	.....	1	.....	.....	1	.....
Totals	143	83	143	96	94	191	115	173	28	207	122	78	195	295
Med.	21–25	21–25	21–25	26–30	26–30	21–25	21–25	26–30	36–40	26–30	25	16–20	21–25	21–25

TABLE VI—*Continued*

Schools														All	Per Cent
15	16	17	18	19	20	21	22	23	24	25	26	27	28		
2	.....	5	8	.....	2	4	3	3	28	.....	8	3	2	135	3.41
9	2	7	14	4	2	8	9	1	20	2	7	3	6	196	4.96
12	15	9	18	3	5	5	13	4	31	14	6	6	13	322	8.14
11	14	14	25	6	3	13	15	5	35	10	11	7	15	388	9.81
14	20	25	44	9	5	12	17	9	63	10	19	7	21	529	13.38
18	18	32	47	10	14	10	26	12	48	4	16	12	20	555	14.01
14	10	19	33	12	10	8	22	11	22	5	12	4	17	401	10.14
8	5	19	34	9	2	6	9	6	27	8	17	4	17	323	8.17
8	10	18	22	3	8	6	5	2	35	6	7	9	10	265	6.70
8	10	2	20	2	7	7	10	6	13	5	15	2	8	236	5.97
6	5	11	9	4	3	1	11	3	23	6	5	3	8	197	4.98
3	.....	7	10	8	6	1	6	1	4	4	5	3	6	132	3.34
.....	3	3	5	1	4	2	6	4	6	2	3	2	5	91	2.30
.....	.....	2	5	3	4	1	3	5	.....	3	1	1	3	56	1.41
.....	.....	.....	3	.....	4	.....	1	2	.....	.....	.....	.....	4	37	.93
.....	1	.....	1	.....	2	.....	1	.....	.....	.....	1	.....	3	23	.58
.....	.....	.....	1	.....	4	2	.....	3	.....	.....	.....	.....	1	21	.53
.....	.....	.....	.....	.....	4	2	.....	.....	.....	.....	.....	2	1	18	.45
.....	.....	1	.....	.....	1	2	.....	1	.....	1	.....	.....	2	12	.30
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	6	.15
.....	.....	.....	.....	.....	.....	.....	.....	1	2	.....	.....	.....	.....	10	.25
113	113	174	299	74	90	91	157	79	357	80	133	68	162	3953	
21–25	21–25	21–25	21–25	26–30	36–40	21–25	21–25	26–30	21–25	25	21–25	21–25	26–30	21–25	

The comparison of the two types of schools is brought out more clearly in the following presentation of the above data, giving the percentage of children who had the respective degrees of hearing:

Degree of Hearing	Residential Schools	Day-Schools	All Schools
0	3.41%	1.06%	2.94%
1- 5	4.96	5.94	5.19
6- 10	8.14	6.55	7.81
11- 15	9.81	7.31	9.2
16- 20	13.38	10.82	13.14
21- 25	14.01	9.6	13.29
26- 30	10.14	6.86	9.70
31- 35	8.17	7.01	8.01
36- 40	6.70	5.18	6.77
41- 45	5.97	6.55	5.99
46- 50	4.98	5.48	5.06
51- 55	3.34	6.09	3.76
56- 60	2.30	5.18	2.77
61- 65	1.41	6.7	2.27
66- 70	.93	4.11	1.38
71- 75	.58	1.98	.8
76- 80	.53	1.52	.64
81- 85	.45	1.21	.54
86- 90	.3	.45	.34
91- 95	.15	.3	.15
96-100	.25	.....	.15
	99.91	99.90	99.90

Thus, in addition to showing a higher median of hearing, the day-schools contain a greater proportion of children in the upper hearing levels, with a percentage of 27.54 for the ranges between 50 and 100, as against 10.24 per cent of the total in the residential schools. Conversely, the residential schools seem to attract a greater ratio of pupils who fall within the lower levels of hearing, from 0 to 50, the percentage being 89.67, as compared with 72.36 per cent of the total for the same type of children in the day-schools.

SUMMARY

A number of facts stand out clearly as the result of the survey of the hearing of children in schools for the deaf.

1. The enthusiasm manifested in this part of the survey indicates that both officers and teachers in schools for the deaf recognize the need of obtaining such data concerning their pupils.

2. A reliable yet rapid test such as may be made by the audiometer makes possible effective grading for the different parts of the school curriculum, whether they be classroom subjects, auricular training, rhythm classes, or speech work.

3. The test by the audiometer may serve as an aid in determining which children should be admitted to schools for the deaf.

4. The median, or central tendency, of the degree of hearing of children in schools for the deaf is represented by 21 to 25 per cent as measured by the audiometer, that is, a loss of from 75 to 80 per cent of normal hearing.

5. A surprisingly small number, approximately 3 per cent, of the entire number tested for hearing were found to be totally deaf.

6. A greater proportion of the younger children, between the ages of 12 and 16, inclusive, possess hearing within the upper levels, from 50 to 100, than is true for the older children tested.

7. The median level of hearing in children in day-schools is higher than it is in children in residential schools for the deaf, 31 to 35 per cent in the former and 21 to 25 in the latter.

8. The enrollment in residential schools seems to bear a higher ratio of children within the lower ranges of hearing, from 0 to 50, than is the case in day-schools.

9. The survey having definitely established that children attending schools for the deaf possess hearing in varying degrees, the direct question follows: What steps are such schools taking to make of this auditory power an active agency in the education of these children?

CHAPTER XIII

SPEECH AND SPEECH-READING TESTS

An important feature of the survey of schools for the deaf was the study of that phase of the training of deaf children concerned with building up efficiency in the use of speech and ablity in speech-reading. To conduct such a study from an impartial point of view, it was deemed advisable to construct a series of tests based upon scientific principles and which could be applied objectively and uniformly. The procedure adopted gains additional interest from the possibility that it may suggest the lines to be followed in developing a method for accurately evaluating this kind of instruction in schools for the deaf.

SPEECH-READING TEST

To carry out the purposes of the tests in speech-reading, a series of sets of sentences embodying the entire range of sounds as they may be interpreted by the eye was constructed. The guide used in making up these sentences was developed from an analysis given by Dr. Edmund S. Conklin in an article entitled "A Method for the Determination of Relative Skill in Lip-Reading," printed in the *Volta Review* for May, 1917. A comparison of this classification of sounds was also made with that given in Martha Bruhn's "Muller-Walle Method of Lip-Reading for the Deaf." On the basis of these two studies, the following chart was devised for the construction of the sentences to be used in the speech-reading test.

GROUP I

(One at least from each of the following homophenous groups.)

p, b, m
f, v
s, z, soft c
sh, zh, ch, j
k, g, ng
t, d, n
oo (long oo), w, wh

GROUP II

(One of each sound.)

l, r, y, h, th
a e i o u long vowels
a e i o u short vowels
aw, ur, oo, (short oo,) a, oi, ow

GROUP III

(Words formed from several of this group of combinations used in each set of sentences.)

thr—, gr—, sp—
—ld, —rk, —mp, —st, —ck, —bl, —ng, —nk.

With the above guide as a basis, the following sentences were constructed for use in the speech-reading tests:

A

1. Will you mail my letter?
2. Have you ever seen the ocean?
3. She rang the doorbell this afternoon.
4. The baby threw the ball in the yard.
5. What book are you reading now?
6. Can you hear the sound of my voice?
7. He had better run out of the rain.
8. How long have you lived in this town?
9. When do you expect to go home for the holidays?
10. Tell the child his father and mother have come.

B

1. Have you read this book?
2. We are having zero weather now.
3. Do you expect to go to college?
4. Please bring me a glass of water.
5. I don't think it will rain very hard.
6. We saw the horse jump the fence.
7. What time do you get up in the morning?
8. What are you going to do with the oil?
9. I am sorry that I cannot show her the game.
10. How old are the youngest children in this school?

C

1. Did you study your lesson?
2. I never heard of that before.
3. How long have you been in school?
4. Don't sit on the edge of your chair.
5. If you don't run you will get caught in the rain.
6. The child has been playing in the yard.
7. Are you surprised to see me here?
8. Will she help the child over the fence?
9. I wish you could go with me to the game.
10. What is the name of the youngest boy in this class?

D

1. Where does your father live?
2. How much money do you want?
3. The clock has just struck six.
4. Look out of the window and tell us what you see.
5. Do you think it will rain to-day?
6. Did you ever live on a farm?
7. Are there any oil wells in this state?
8. The ship is at the wharf.
9. The baby is too young to go to church.
10. I will meet her at four o'clock.

The tests of speech-reading were given to classes as a whole. Each child was given a sheet of paper and told to write the name of the school, his own name and his class grade. The teacher then instructed the pupils in the class to write exactly what they read from her lips. If a question were asked, they were to write the question, not the answer. Each sentence, they were also informed, would be read twice, and no writing was to be done until the sentence had been read a second time. The teacher gave the test first, one of the groups of ten sentences, reading each sentence in the way she was accustomed to speak to her class. In this case the teacher acted as the familiar or home element.

This test was followed by a similar set of sentences given by the field agent, the children writing what they could from his lips. Here the stranger element was introduced, the field agent acting as one with whom the pupils were not familiar, and who would thus represent the outside world.

The sentences used in speech-reading were given to only the three most advanced classes in any school, on the theory that the pupils in these classes had had at least six or seven years of oral instruction and would also be familiar with the meaning of the words in the sentences. This, however, did not always hold true. In a few of the schools, the children had not reached a grade sufficiently advanced for them to understand some of the words or to be familiar with the use of the different tenses of the verbs. In a few schools, the children had

not had sufficient oral instruction to enable them to read these sentences either from the lips of the field agent or when spoken by the teacher. For this reason, it should be stated here that when the results of these tests are given in this report they are accompanied by information concerning the number of years the pupils have received instruction in speech, the age when deafness occurred, and degree of hearing as determined by the audiometer test. The results for each school should be read in the light of these conditional factors.

A definite plan for scoring the speech-reading sentences was laid out, and the correction of the papers conformed as far as possible with this plan. Since there was no continuity in the groups of sentences and no context to guide the lip-reader, a fair degree of liberality was employed in constructing the scoring key. For instance, as may be seen in the chart below, a child was given full credit when homophenous words or words that looked very similar on the lips were substituted for the words in the sentences given by the examiner or teacher, provided the sentences still made good sense. Further, in order that each paper be graded as uniformly as possible, one person corrected the test given by the examiner and another the one given by the teacher, each being guided by the scoring key.

Occasionally, however, for certain of the sentences written by the pupils there seemed to be no rule which could be applied, the scorers in such cases using their judgment to determine a fair grade. In cases of doubt the pupil was given the advantage in grading.

The procedure followed in correcting the speech-reading sentences is given in the following outline, the figures to the right indicating the respective credits allowed:

1. Complete understanding with correct language..... 10
2. Complete understanding with "deaf language"..... 9
3. Homophenous words, if the sense is not destroyed..... 10
4. Omission of words destroying the sense. Half off for the key word. Balance of sentence graded according to the number of words in the sentence.

5. Omission of words or phrases altering the sense, three off 7
6. Omission of unimportant words or phrases not destroying the sense ..... 8 or 9
7. Omissions in the use of *the* or *a*..... 9
8. Insertion of words destroying sense of the original sentence 7
9. Insertion of words not destroying the sense..... 8
10. Insertion of *the* or *a*..... 9
11. Careless errors (that is, past for present tense, wrong use of the pronoun, etc.), three off for each..... 7
12. Past tense for another past tense, or a present tense for another present tense..... 8
13. Interrogative used for declarative and *vice versa*..... 5
14. Substitution of a word not altering the sense..... 9
15. Substitution of a word altering the sense..... 7
16. Adverbial phrases only given..... 2
17. Adverbial phrase omitted..... 8
18. No credit taken off when a child gave *we* for *I* and *us* for *me*.
19. The wrong plural or the singular use of nouns was not counted except in the use of *children* for *child*, 1 being deducted for that error.
20. Habitual language forms used by children, instead of the exact form of the sentence, were given full credit if the forms were grammatically correct.

When all the papers had been scored and averaged, the results were arranged in tabular form, as shown in Table I. The schools in this summary are indicated by number, but no attempt has been made to rank them according to the averages obtained in the test. Accompanying the results for each school is information giving the method, or methods, of instruction employed, and, for the group of children tested, the average amount of hearing as measured by the audiometer, the average number of years these children had been taught speech, and the average age, in months, when deafness occurred. It is hoped that in any comparative examination of the results, due weight will be given to the fact that the latter may be but a reflection of the conditions contained in this supplementary information.

One of these averages, too, that for the age when deafness occurred, is somewhat uncertain. In some schools no information was available on this point for some of the pupils tested, and so the average obtained is only an approximate statement for that school.

It is to be noted from Table I that with the excep-

TABLE I

Results of Speech-Reading Test.

School R—Residential D—Day-School	Methods of Instruction O—Oral A—Auricular M—Manual C—Combined	Number of Pupils Tested	Average Amount of Hearing (Per Cent)	Average Age Deafness Occurred (In Months)	Average Number of Years Taught Speech	Average on Test	
						Examiner	Teacher
R— 1	O, A, M	19	27.9	12	9.01	46.6	64.9
R— 2	C	24	23.2	19	9.41	49.3	58.4
R— 3	C	16	28.8	34	5.93	34.1	44
R— 4	C	24	33.3	21	6.07	37.6	39.8
R— 5	C	24	30	34	9.18	48.3	63.7
R— 6	O, A, M	35	23.3	21	11.9	24.8	35
R— 7	C	31	25	82	5.72	57.4	66.3
R— 8		34	33.7	44	8.14	47.7	59.8
R— 9	O, M	17	46.5	30	7.82	40.5	56.9
R—10	C	38	27.6	24	8.36	31.2	36.2
R—11	O	22	26.9	5	10.31	61.7	69.5
R—12	O, A, M	26	25	27	7	20.6	20.6
R—13	C	20	24.7	21	8.47	31.7	47.2
R—14	O	55	28.7	27	8.94	61.9	69.9
R—15	O, M	32	23.4	13	9.84	58	62.3
R—16	O, C	22	26.4	27	7.38	29.5	44.8
R—17	C	24	29.3	15	9.20	59.2	66.2
R—18	O, A, M, C	36	28.5	24	8.92	29.1	46
R—19	C	30	35.4	27	7.29	33.2	40.4
R—20	O, A, M	14	38.2	20	10.21	59.6	70.4
R—21	O, A, M	19	18.6	0	7	28	29.4
R—22	O, A	28	29.3	24	8.14	25.7	53
R—23	O, A	31	28.1	23	9.66	18.6	27.7
R—24	O, A, C	32	29.5	33	5.75	34.8	45.2
R—25	O, C	19	25.3	14	5.46	21.9	20.7
R—26	O, A, M	15	24.6	22	4.7	39.1	54.9
R—27	O, M	23	26.3	36	9.06	55.7	58.3
R—28	O, M, C	19	32.7	26	6.14	32.7	30.6
R—29	O, M	33	25.8	25	10.09	31.6	45.9
D— 1	O, A	21	34.7	22	6.65	46	45.6
D— 2	O, A	8	36.4	20	9.87	66.6	87.9
D— 3	O	19	46.8	32	6.89	66.3	90.5
D— 4	O, A	12	37.5	17	4.32	27.7	29.4
D— 5A	O, M, C	7	21.4	36	6.62	37.4	69.7
D— 5B	O	6	38.8	54	4.28	48.7	33.8
D— 6	O	18	41.9	13	4.65	70.9	70.9
D— 7	O, A	27	35	34	6.68	30.3	53.8
D— 8	O, A	18	35	37	5.65	62.7	75.1
D— 9	O, A	24	47.5	39	8.8	53.8	71.1
D—10	O	24	27.9	33	8.39	71.3	78.3
D—11	O	9	21.4	42	6.87	48.4	83.7
D—12	O	30	45.3	40	4.79	67.2	72.1
D—13	O	9	63	60	2.22	60.3	73
D—14	O	4	38.8	0	8.9	24.8	37

tion of a few schools, the children obtained better averages when reading from the lips of the teacher. Of the six exceptions to this rule, residential school No. 12, and day-school No. 6 showed the same results with both examiner and teacher. In residential schools Nos. 25 and 28 and day-schools Nos. 1 and 5B, the children read from the lips of the field agent with greater success than from the lips of their own teachers.

As has been said, no attempt was made to rank the schools directly according to their efficiency in teaching speech-reading. It was not possible to do this because of the great differences among the schools in the average amount of hearing, in the average age when hearing was lost, and in the average number of years the children who were tested had had instruction in speech. It might have been a desirable plan to assign values on a graded scale for each of these items, thus giving each school a definite standing with respect to the other schools tested for speech work. However, a serious obstacle to such a plan appears in the probability that within each of the factors to be considered the differences in the range are progressive in their relation to speech work. Thus, a difference of 10 per cent in the upper ranges of hearing may mean much more with relation to effective speech-teaching than would the same difference in the lower ranges. A progression of the same sort may also be true in the range of difference in age when deafness occurred, and in the length of speech instruction. It would, therefore, be necessary to determine accurately the proportionate value of such differences in their effect upon speech work before a classification other than the one given in Table I could be made.

However, it is obvious that a school with a higher average age when deafness occurred, a higher average degree of hearing, and a higher average number of years of speech instruction, or a higher combination of these, should be expected to show better results in the speech

tests of the survey than one not so favored in these respects.

INTELLIGIBILITY OF SPEECH

The tests to determine the intelligibility of the speech of deaf children were individual ones, the purpose being to find out whether or not there was ability to use speech intelligibly enough to be understood. Each child in turn was given a group of ten sentences and he was told to read each sentence aloud to the field agent, two trials being permitted if necessary. The field agent then repeated to the teacher what he understood the child to say, the teacher verifying from a duplicate set of the same sentences in her hand. Full credit was given the child if he could thus convey to the field agent the idea contained in each sentence. No credit was given if he simply spoke a few words which gave no idea of the meaning of the sentence. Nor was an attempt made to test the accuracy of speech; for instance, if a child said "play-*ed*," "walk-*ed*," or "talk-*ed*," instead of "played," "walked," or "talked," he was given full credit. Errors of pronunciation, so long as they did not obscure the meaning of a sentence, were disregarded, the theory being that in everyday normal speech perfect enunciation is the exception rather than the rule.

After the child had read his set of sentences to the field agent, he was given a similar group which he read to his teacher, the latter repeating to the field agent for verification what she thought the child said. This constituted the second part of the test for intelligibility of speech.

The words used in the sentences for this test were made up of nearly all the elementary sounds used in combinations as found in the Northampton Charts. The guide thus derived is given in the chart that follows:

GROUP I

(Each sound from this group was used in each set of sentences.)
fl, sl, fr, thr, spr, str, ser, sn, sm, sw, spl, tw, ng.
Long vowels—a, e, i, o, u.

Short vowels—a, e, i, o, u.
ou, oi, aw, ar, ur, oo, oo (long oo, short oo).

GROUP II

(As it was almost impossible to include every sound from this group in each set of test sentences, a choice was made where the formations were similar.)

pl, bl; cl, gl; pr, br; cr, gr; tr, dr.

GROUP III

(One sound for each set of sentences was taken from this difficult group of final endings.)

———eps, ———eks, ———ets.

GROUP IV

(One at least from each of these groups of verb endings.)

(a)	(b)
———med.	———fed.
———ned.	———ped.
———ved.	———shed.
———zed.	———ked.
———bed.	———ched.
———gged.	
———thed.	
———ged.	
———led.	
———red.	
———sed.	

GROUP V

(One at least from this group of long vowels or diphthongs followed by *l* or *r*.)

———ale.	———air.
———ile.	———ear.
———ole.	———oar.
———owl.	———our.
———eel.	———ire.
———ool.	———ure.

GROUP VI

(One at least from this group of ———*le* endings after consonants.)

———ple.	———dle.
———ble.	———kle.
———tle.	———gle.

GROUP VII

(Either one of the following was used in a sentence, never both.)

qu, squ.

In order that the field agent might not become too familiar with each group of sentences from the many repetitions which he necessarily had to hear, a great many sets of sentences had to be provided, all, however, approximating the same principles of construction.

The following groups of sentences are typical of those used for the purpose of the test:

A

1. Please brush the slate.
2. I heard the large clock strike six.
3. The boy ought to gargle his throat.
4. Don't try to drive in the snow.
5. It costs too much to grow fruit here.
6. The lightning flashed twelve times during the storm.
7. When did Jack lose his small dog?
8. How he squirmed when I splashed water on him!
9. Put on your sweater and jump into the cab.
10. The spring on the screen door is broken.

B

1. Jack has a small black dog.
2. I must have my white dress cleaned.
3. It is dark and cool near the spring.
4. Don't let the flies into the house.
5. The little boy jumped into bed and went to sleep.
6. The maid sneezed twice.
7. He squealed when he got the splinter in his foot.
8. Will you please bring me some fresh water?
9. The grasshopper was tied to a string.
10. I shall scream if you throw the bug on me.

C

1. Please close the screen door.
2. He splashed water over his sprained ankle.
3. He put up a small swing.
4. The crow flew over the house when the shot was fired.
5. The little boy marched in his squeaky shoes.
6. It snowed only twice last winter.
7. Three men drove through the forest.
8. Where is this stranger from?
9. Does your mother keep a cook?
10. Can you walk a mile?

D

1. The soil in this country is rich.
2. The small boy asks too many questions.
3. What tools will you use to make the frame?
4. The child brought three beautiful flowers to school.
5. How did you sprain your ankle?
6. They will use the sled when it snows.
7. The class drove to the grove by the stream for the picnic.
8. I got a splinter in my finger from the screen door.
9. The two squaws lived on the plain.
10. Father picked the nuts for the cook.

E

1. Can you climb a tree?
2. The little boy screamed when he saw the snake strike the dog.

3. Do you smell those sweet flowers?
4. Please gargle your throat twice a day.
5. How did you sleep last night?
6. Crawl over the wall as quickly as you can.
7. The preacher was from Springfield.
8. Your teacher will explain that to you.
9. We missed the cool breeze from the ocean.
10. She walked more than a mile.

F

1. I heard the clock strike six.
2. He splashes too much when he swims.
3. Was the breeze from the ocean refreshing?
4. The blacksmith stood under the spreading chestnut tree.
5. The smell of pepper makes me sneeze.
6. Father has lived here quietly for twelve years.
7. The boy burned his hand a little.
8. The airplane flew over the sleepy town.
9. Your poor baby cried three or four times last night.
10. Where is the screw?

G

1. We filled the glass to the brim.
2. The President's picture was flashed on the screen.
3. He spread the books over the desk.
4. The boy snatched the apple from the tree.
5. We made the acquaintance of a stranger.
6. Keep your thread nice and smooth.
7. I cannot explain why the grain on the farm has not been cut.
8. Please tell me how much the cap costs.
9. Your sweater is torn.
10. Did you hear the clock strike twelve?

H

1. We miss the cool breeze from the ocean.
2. I saw quite a few flakes of snow.
3. The child asks if she may play in the grass.
4. Do you like scrambled eggs?
5. If your throat is sore you must gargle it.
6. Will you be glad when spring comes?
7. The small boy wished to strike a home run.
8. Put out the fire before you begin to dress.
9. His arm has been in a splint for twelve weeks.
10. The little girl likes to swing.

As was done for the speech-reading test, the results of the test of intelligibility of speech were put together in tabular form, with the same supplementary information for each school, namely, that relating to amount of hearing, age when deafness occurred and number of years taught speech. These data are presented in Table II. Here also, as with the results for the tests in speech-

TABLE II

Results of Intelligibility of Speech Test

School R—Residential D—Day-School	Methods of Instruction O—Oral A—Auricular M—Manual C—Combined	Number of Pupils Tested	Average amount of Hearing (Per cent)	Average Age Deafness Occurred (In Months)	Average Number of Years Taught Speech	Average on Test	
						Examiner	Teacher
R— 1	O, A, M	19	27.9	12	9.01	56.3	53.7
R— 2	C	24	23.2	19	9.41	54.6	56
R— 3	C	15	28.8	34	5.93	35	38.1
R— 4	C	23	33.3	21	6.07	61.1	46.7
R— 5	C	25	30	34	9.18	75.6	83.4
R— 6	O, A, M	34	23.3	21	11.9	33.5	39.1
R— 7	C	31	25	82	5.72	90.3	94.7
R— 8	——	34	33.7	44	8.14	61.9	56.9
R— 9	O, M	17	46.5	30	7.82	53.2	78.2
R—10	C	38	27.6	24	8.36	57.8	63.7
R—11	O	22	26.9	5	10.31	72.5	81.8
R—12	O, A, M	26	25	27	7	33.1	29.8
R—13	C	20	24.7	21	8.47	48	47.5
R—14	O	55	28.7	27	8.94	73	80.8
R—15	O, M	32	23.4	13	9.84	73.9	74.5
R—16	O, C	22	26.4	27	7.38	40.7	55.5
R—17	C	24	29.3	15	9.20	71.9	75
R—18	O, A, M, C	36	28.5	24	8.92	67.2	63.9
R—19	C	27	35.4	27	7.29	51.1	59.1
R—20	O, A, M	14	38.2	20	10.21	62.9	80.7
R—21	O, A, M	19	18.6	0	7	29.2	28.4
R—22	O, A	28	29.3	24	8.14	47.7	52.1
R—23	O, A	31	28.1	23	9.66	37.1	35.5
R—24	O, A, C	32	29.5	33	5.75	67.2	59.7
R—25	O, C	19	25.3	14	5.46	41	26.6
R—26	O, A, M	15	24.6	22	4.7	61.3	50
R—27	O, M	23	26.3	36	9.06	69.7	60.9
R—28	O, M, C	15	32.7	26	6.14	56	64.3
R—29	O, M	33	25.8	25	10.09	57.3	63.1
D— 1	O, A	21	34.7	22	6.65	61.6	68.3
D— 2	O, A	8	36.4	20	9.87	66.3	71.3
D— 3	O	19	46.8	32	6.89	88.2	89.2
D— 4	O, A	11	37.5	17	4.32	66.4	62.7
D— 5 A	O, M, C	7	21.4	36	6.62	72.6	80.7
D— 5 B	O	6	38.8	54	4.28	65	67.5
D— 6	O	18	41.9	13	4.65	93.6	94.4
D— 7	O, A	26	35	34	6.68	67.7	71.3
D— 8	O, A	18	35	37	5.65	80	86.4
D— 9	O, A	24	47.5	39	8.8	84.2	85.6
D—10	O	23	27.9	33	8.39	79.8	84.1
D—11	O	9	21.4	42	6.87	76.7	84.4
D—12	O	30	45.3	40	4.79	90	90.7
D—13	O	9	63	60	2.22	62.8	85.6
D—14	O	4	38.8	0	8.9	31.3	46.3

reading, the relative standing of a school is conditioned by these accompanying factors.

An interesting aspect of the table just given is that in 12 of the 29 residential schools the speech of the pupils selected for the test was more intelligible to the visiting examiner than it was to the teachers with whom the children were in daily contact. In only one of the day-schools, No. 4, did the same condition hold. This may be explained, in part, by the probability that the field agent could not avoid the influence of the continued application of the same type of test and thus to some degree was able to anticipate what a child would say.

SUMMARY

1. Such tests to determine the efficiency of speech-training as were conducted during the survey point to the possibility of developing a standard method of evaluating the results of this type of work in schools for the deaf. It is plain that the practical application of such tests would have a marked effect in raising the standard of speech-teaching in this country.

2. Qualifying the averages obtained by each school in these tests are the averages for certain conditions that influence speech work, namely, age when deafness occurred, degree of residual hearing, and length of training in speech. A certain degree of comparison among schools is possible when these factors are taken into account.

3. If the relative standing of a school falls below what seems to be the general level of efficiency as determined by these tests, there is cause for such school to feel the need of improvement in its efforts to impart speech ability to its pupils.

CHAPTER XIV

PSYCHOLOGICAL SURVEY

The committee of the National Research Council in charge of the survey of schools for the deaf included, among the several tests given, an intelligence test and a standardized educational test. These tests were given by the field agents, who were sent out by the survey committee to gather the required information and to conduct the several tests. This report is based upon an analysis of the results obtained by the intelligence and educational tests.

The Tests.—The tests in question are the Pintner Non-Language Mental Test and the Pintner Educational Survey Test.[1] These tests were designed in the first place specifically for use with deaf children and they have so been used on many occasions. They have also been used extensively with hearing children. The Non-Language Mental Test measures general intelligence. No language is used either in the administration of the test or by the subject taking the test. It is, therefore, eminently suitable for use with deaf children. With hearing children it correlates from .25 to .66 for different grade groups with such verbal tests as the National. Its validity as a measure of ability with an elaborate criterion has been reported by Liu as .78. Its reliability is about .79 for grades 4 to 6.[2] A further study of these tests given to a school for the deaf and repeated after four years shows

[1]For a full description and reproduction of these tests, see Reamer, J. C. "Mental and Educational Measurements of the Deaf," Psychological Monograph No. 132, Psychological Review Co., Princeton, N. J., 1921. The tests themselves are published and sold by the College Book Company, Columbus, Ohio.

[2]See Pintner, R., "Results Obtained with the Non-Language Group Test," *Journal of Educational Psychology*, November, 1924 (vol. xv, no. 8), pp. 473-483.

a correlation of .80 for both the mental and educational indices after a period of four years.[3] This means that these indices are probably fairly stable.

The Educational Survey Test[4] was constructed from standard educational tests in use in hearing schools. It attempts to give a general all-around measure of the basic elements in school, such as reading, arithmetic, and the like. The stability of the indices of this educational test in one school for the deaf has been pointed out above.

Furthermore, these two tests, the mental and educational, have been standardized together on the same group of children, both in the case of the hearing and the deaf. This is very important in dealing with differences between educational and mental indices. The standardization group for both tests in the same.[5] There is, therefore, no danger of error being made by having one test standardized on a better group than the other and thus leading one into erroneous conclusions as to the amount of educational achievement to be expected from a given amount of mental ability.

The Children Tested.—The survey workers decided to limit the number of children to be given psychological tests for two reasons; (1) the lack of time and assistants to give every child a test, (2) the impossibility of using the tests under discussion with immature children. It was decided, therefore, to test all children aged twelve and above in all schools, regardless of the grades in which they might be found. Table I shows the number of children tested. The children are arranged according to age

[3]Pintner, R., "Group Tests after Several Years," *Journal of Educational Psychology*, September, 1925 (vol. xvi, no. 6), pp. 391-395.

[4]The construction of this test is described by Pintner, R., and Fitzgerald, F., in "An Educational Survey Test," *Journal of Educational Psychology*, April, 1920 (vol. xi, no. 4), pp. 207-223.

[5]For detailed description of the standardization see Pintner, R., and Marshall, H., "A Combined Mental-Educational Survey," *Journal of Educational Psychology*, January, 1921, and February, 1921 (vol. xii, no. 1), pp. 32-43 and pp. 82-91.

TABLE I

Distribution of Cases Tested

Schools	Ages																Totals
	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	30	
D-1	6	11	7	11	8	2	2	...	...	...	...	...	...	...	...	...	47
D-2	6	4	5	4	5	4	4	1	1	...	...	...	...	...	...	...	34
D-3	17	14	14	11	6	3	2	...	...	...	...	...	...	...	...	...	67
D-4	2	2	1	...	1	3	...	...	...	...	...	...	...	...	...	...	9
D-5	3	3	...	5	2	1	...	1	...	...	...	...	...	...	...	...	15
D-6	5	10	7	3	3	...	...	...	...	...	...	...	...	...	...	...	28
D-7	12	18	15	8	13	2	2	5	1	...	...	...	...	...	...	...	76
D-8	5	7	5	5	4	3	...	...	1	...	...	...	...	...	...	...	30
D-9	10	7	10	7	27	1	...	1	1	...	...	...	...	...	...	...	64
D-10	14	12	11	7	7	5	3	2	...	...	...	...	...	...	...	...	61
D-11	2	3	...	1	4	1	...	...	...	...	...	...	...	...	...	...	11
D-12	35	47	36	38	...	10	1	3	2	1	...	...	...	...	...	...	173
D-13	...	...	...	1	...	1	2	...	...	...	...	...	...	...	...	...	4
Totals	117	138	111	101	80	36	16	13	6	1	...	...	...	...	...	...	619
R-1	23	20	16	14	20	11	12	6	6	3	3	1	...	...	...	...	135
R-2	6	8	14	10	11	18	6	5	2	...	...	...	...	...	...	...	80
R-3	6	9	42	18	14	...	8	...	9	6	...	1	2	...	...	...	115
R-4	12	11	16	19	12	16	14	6	2	1	...	...	...	...	...	...	109
R-5	13	7	8	18	10	11	7	8	8	4	1	...	...	...	...	...	95
R-6	29	31	21	18	29	19	16	16	4	5	3	...	...	...	...	...	191
R-7	...	...	5	1	2	6	11	15	23	24	39	...	...	...	...	...	126
R-8	19	20	20	20	23	16	16	10	4	3	5	1	1	...	...	...	158
R-9	6	3	5	6	2	4	1	2	1	...	...	...	...	...	...	...	30
R-10	23	25	29	19	25	22	15	8	15	3	4	...	...	...	1	...	189
R-11	19	23	23	14	14	10	11	4	...	...	...	...	...	...	...	...	118
R-12	18	11	9	6	6	8	5	6	11	...	...	...	...	...	...	...	80
R-13	14	19	27	25	24	23	19	16	15	4	2	2	2	2	...	...	194
R-14	29	36	41	43	43	25	29	24	9	5	2	...	...	...	...	...	286
R-15	16	12	8	11	14	13	13	12	2	4	...	...	...	...	...	...	105
R-16	8	18	7	14	17	11	6	7	1	1	...	...	...	...	...	...	90
R-17	21	17	18	35	25	17	16	10	12	3	...	...	...	...	...	...	174
R-18	28	33	47	33	48	41	14	18	13	3	...	...	1	...	...	...	279
R-19	6	6	6	12	9	10	5	8	3	5	1	...	...	...	...	...	71
R-20	7	12	19	8	23	7	4	8	2	1	...	...	...	...	...	...	91
R-21	8	16	9	14	10	9	11	7	1	2	1	1	3	...	...	...	92
R-22	22	26	25	21	26	22	10	7	...	...	...	...	...	...	...	...	159
R-23	20	11	12	9	11	6	7	2	2	...	...	...	...	...	...	...	80
R-24	25	42	87	37	37	29	23	14	30	9	4	1	...	2	...	1	341
R-25	9	7	7	10	8	14	5	6	6	5	...	2	...	...	...	...	79
R-26	10	14	11	20	35	5	7	10	5	1	...	...	...	...	...	...	118
R-27	5	11	3	10	12	5	7	9	1	...	...	...	...	...	...	...	63
R-28	28	22	32	24	14	15	12	7	6	4	1	...	...	...	...	...	165
Totals	430	470	567	489	524	393	310	251	193	96	66	9	9	4	1	1	3,813
Grand Totals	547	608	678	590	604	429	326	264	199	97	66	9	9	4	1	1	4,432

and according to school. The schools are, furthermore, divided into day and residential schools. D-1, D-2, etc., are the designations for the day-schools; R-1, R-2, etc., for the residential. Thirteen day-schools contributed 619 children; twenty-eight residential schools contributed 3,813 children, making a total of forty-one schools and 4,432 children.

Geographical Distribution.—The geographical distribution of the children tested is shown in Table II. This table also contains a comparison with the total number of deaf persons in the United States as reported by the last census of the deaf, made in 1920.[6] Roughly one-tenth

TABLE II

Comparison of Deaf Sampling With Census

1920 Census			This Study	
Geographic Division	No.	Per cent	No.	Per cent
United States	44,885	99.9	4,432	100.0
New England	3,093	6.9	156	3.5
Middle Atlantic	8,361	18.6	1,426	32.2
East North Central	10,770	24.0	488	11.0
West North Central	5,812	12.9	506	11.4
South Atlantic	5,946	13.2	540	12.2
East South Central	3,745	8.3	404	9.1
West South Central	3,902	8.7	456	10.3
Mountain	1,211	2.7	174	3.9
Pacific	2,045	4.6	282	6.4

of the probable number of deaf individuals in the United States were included in the testing program of the survey. What percentage our population of 4,432 children is of the total population of deaf persons between the ages of 12 and 20 or 25 is difficult to determine. It is certainly greater than 10 per cent and probably somewhere between 25 and 50 per cent. We may therefore say that from a quarter to a half of the deaf children between the ages of 12 and 20 were included in this psychological survey.

From Table II we learn further that the geographical distribution of the children tested is roughly the same as the geographical distribution of the total number of the deaf in the United States. The percentages are small

[6] "Deaf-Mutes in the United States: 1920." Bureau of the Census, Department of Commerce, Washington, 1923.

in both cases for New England, Mountain and Pacific, and medium for West North Central, South Atlantic, East South Central and West South Central. The greatest discrepancies are for the Middle Atlantic Section which contains a larger percentage of children tested, and for the East North Central which contains a much smaller percentage of children tested, as compared with the total distribution. On the whole, however, we may say that the children tested are probably very typical of deaf children in the United States.

Age Distribution of Children Tested.—Children generally enter schools for the deaf between the ages of 6 and 9, (except of course in the case of those who become deaf in later life). The number becoming deaf after 9 or 10 is negligible, as will be seen further on in this report. We should expect, therefore, a gradual decrease in numbers from about age 7 or 8 up to the later years, just as we find in schools for the hearing. As the children grow older, greater numbers tend to drop out for many reasons.

Table I shows the number tested at each age from 12 upwards. Examining the last row of this table which gives the total number of children tested at each age, we note that the peak occurs at age 14. From this age on there is an almost steady decline, as we would expect. The customary expectation would have been to see the peak at age 12. There is no obvious explanation of the smaller number of children aged 12 and 13, except the probability that not all of the children of those ages were available for the tests. Although the surveyors planned to test all 12-year-old children, the chances are that this aim was not absolutely achieved. We may assume that some 12-year-olds, and to a lesser extent some 13-year-olds, were not included in the testing because they were in very elementary grades and were not deemed capable of taking the tests. On this assumption the 12-year-olds that remain may be slightly superior to a complete distribution of children of that age.

The ages of the children in Table I are also instructive from an educational point of view, inasmuch as we note that decided elimination does not set in until after age 17 or 18, whereas with hearing children the greatest elimination takes place after ages 14 or 15. The deaf child probably enters school a little later than the hearing, but he more than makes up for it by staying several years longer. The educator of the deaf has a longer period than the educator of the hearing during which he can influence the development of his pupils. This does not mean that he has a better chance to influence this development. If the child is more plastic, more modifiable in early life, then the teacher of the deaf is deprived of more of the modifiable early years of the child's life, than is the teacher of hearing children. A careful experiment should be made of the development of deaf children according to their age at entering school. Nursery schools for deaf children of pre-school age might be useful.

The residential schools tend to keep their pupils much longer than the day-schools. Only one pupil above twenty was found in a day-school, whereas there are many pupils in the twenties in residential schools. A more minute study of the age distribution of particular schools will show marked individual differences. In some schools the assumption seems fair that all 12-year-olds were not examined. Examine the distribution of ages in R-20, R-18, R-14, and R-24.[7]

The Establishment of Norms.—After the tests were scored, age percentile tables were constructed.[8] These percentile tables show the scores made by progressive five per cents from the child scoring lowest to the child

[7]At the time of the visit of the field agents to R-14, the children of the primary department in that school were in quarantine for diphtheria, and so quite a number of 12-year-olds were not included in the tests.—*The Editor.*

[8]This work was done by Prof. Irving S. Fusfeld of Gallaudet College, and the writer of this report is greatly indebted to him for this help.

scoring highest at each age. The percentile score can then be turned into an index, which is a rating in terms of the standard deviation on the assumption of a normal distribution. The index corrects the discrepancy of the percentile distribution occasioned by the piling up of cases around the median and the scattering of cases at the upper and the lower end. Differences between educational and mental percentiles would not be comparable, but differences between educational and mental indices are comparable.

This method of establishing indices was followed so that comparison might then be made with the previous survey by Reamer. Table III gives the percentiles for the

TABLE III

Percentile Scores for the Non-Language Test
All Deaf Children Within Each Age Group

Per centile	Age									
	12	13	14	15	16	17	18	19	20	21+
100	495	565	607	590	572	581	573	595	577	575
99	481	508	506	549	558	559	552	580	565	563
95	425	451	476	492	509	523	532	544	541	540
90	390	416	442	458	478	502	512	516	504	518
85	375	395	422	436	453	486	489	498	472	498
80	358	374	410	416	439	465	475	484	450	483
75	340	358	392	399	425	450	461	472	431	466
70	327	338	375	384	408	435	446	452	410	442
65	306	325	355	373	394	422	425	436	400	427
60	292	309	339	361	377	403	415	417	386	413
55	277	297	325	348	361	389	397	404	375	394
50	265	286	307	336	348	375	384	385	359	377
45	250	270	294	325	332	361	359	371	341	351
40	231	256	277	309	316	342	347	359	324	344
35	215	240	261	297	301	324	326	342	304	337
30	203	222	244	277	281	305	313	324	288	321
25	190	198	229	253	253	282	290	303	270	299
20	162	176	206	225	225	258	267	290	257	271
15	145	153	179	193	197	237	242	264	208	245
10	111	118	147	147	160	197	187	237	171	229
5	76	67	95	87	107	149	141	163	109	165
1	0	22	32	24	28	31	14	65	42	33
0	0	6	0	0	4	0	0	6	38	30

TABLE IV

Percentile Scores for the Educational Test
All Deaf Children Within Each Age Group

Percentile	Age									
	12	13	14	15	16	17	18	19	20	21+
100	93	99.5	98.5	90	102	115	100	102	106	121
99	75	76	83.5	87	92	100.5	97	101.5	103.5	109
95	44	53	58	68	75	81	81	91.5	100	105
90	32	40	47	59.5	63	70	73	79.5	93	99
85	26	32	40	49.5	55	63.5	67	69	90	95
80	23	29	34	44	51	57.5	64	61.5	87.5	92
75	21	26	31	39	45	52	56.5	58	86	89.5
70	18	23	27	36	40	47.5	53	53	79.5	81
65	16	21	25	33	37	42	48	50	79	79.5
60	14	19	22	31	34	40	46	49	73	74.5
55	12	17	20	29	32	36	40	46	68.5	72
50	11	15	19	28	31	34	36	43	66	68
45	10	13	16	25	29	32	32	41	49	64
40	9	11	14	23	26	29	31	38	44	60.5
35	8	10	13	21	24	28	30	34	41	55
30	6	8	11	20	21	26	29	30	38	44.5
25	6	7	9	17	19	25	27	27	35	37
20	4	5	7	14	17	22	25	20	34	25.5
15	3	4	5	12	15	20	21	17	33	22
10	2	2	4	10	12	13	14	11	31	14
5	1	1	2	6	6	10	12	8	28	6
1	0	0	0	1	2	3	8	4	18	0
0	0	0	0	0	2	0	8	4	18	0

Non-Language Test and Table IV for the Educational Test.[9] Table V gives the required information for converting percentiles into indices. For a more detailed account of the method, the reader must be referred to the Reamer report.[10] It is sufficient for the general reader to bear in mind that all indices make a comparison of a

[9]Table IV for the educational test shows the percentile values calculated by Fusfeld for ages 12, 13 and 14. The values for the other ages have been taken from the Reamer Survey. There did not seem to be sufficient difference in these upper ages, containing relatively few cases, to warrant the time and expense required to re-calculate these percentile values.

[10]Reamer, J. C., "Mental and Educational Measurements of the Deaf." Psychological Monograph No. 132, Psychological Review Co., Princeton, N. J., 1921, p. 130.

TABLE V

Table for the Conversion of Percentiles into Indices

P.	I.	P.	I.	P.	I.	P.	I.
1	10	26	40	51	50	76	60
2	18	27	41	52	51	77	61
3	21	28	41	53	51	78	61
4	23	29	42	54	51	79	62
5	25	30	42	55	52	80	62
6	26	31	42	56	52	81	63
7	28	32	43	57	52	82	63
8	29	33	43	58	53	83	64
9	30	34	44	59	53	84	64
10	31	35	44	60	54	85	65
11	31	36	45	61	54	86	66
12	32	37	45	62	54	87	66
13	33	38	45	63	55	88	67
14	34	39	46	64	55	89	68
15	34	40	46	65	55	90	69
16	35	41	46	66	56	91	69
17	36	42	47	67	56	92	70
18	36	43	47	68	57	93	71
19	37	44	48	69	57	94	72
20	37	45	48	70	58	95	74
21	38	46	48	71	58	96	75
22	38	47	49	72	58	97	77
23	39	48	49	73	59	98	79
24	39	49	49	74	59	99	82
25	40	50	50	75	60	100	90

P.—Percentile. I.—Index.

particular deaf child with the total group of deaf tested at his age. An index of 50 means an average deaf child for the age in question. The index is like the Intelligence Quotient a relative measure, relative to the particular age of the individual.

The meaning of these indices is set forth below:

Indices Between	Educational	Mental	Percentage
0-19	very poor	dull	2.2
20-39	poor	backward	22.8
40-59	average	normal	50.0
60-79	good	bright	22.8
80-100	very good	very bright	2.2

If a child has an educational index between 40 and 59, we say he is doing average educational work for his age, or in other words he belongs among the middle fifty per cent of children of that age. If his mental index is between 60 and 79, he is mentally bright, i. e., belongs to the upper 23 per cent of the children, and so on.

The difference between these indices shows us the relation between the mental ability and educational attainment of the child. A plus difference shows that the child is doing better work than children of his mentality usually accomplish. Such children are doing well—better than average—regardless of what their educational index may be. A minus difference shows that a child is not doing as good work educationally as he is capable of doing as judged by his mentality. Differences from + 8 through 0 to — 8 are probably not very significant. Fifty per cent of our class fall between these two points. All children with minus differences greater than — 8 should be carefully studied to see why they are not doing work more nearly commensurate with their ability. They may be very bright or normal or dull children mentally, but they are all alike in that they are not working up to capacity. The reasons for this may be laziness, lack of interest, poor teaching, grade misplacement, lack of stimulus at home, and the like. These are the cases where we have wasted intelligence.

Comparison of Schools.—The data for each school were tabulated according to the mental and educational indices and the ages of the pupils.[11] The median ratings in each age for both the mental and educational tests are consolidated for the whole group of schools visited in Table VI and also the number of cases on which each median is based. In addition to this table, Tables VII

[11] These basic tables, giving the details of the psychological examinations, are not reproduced in this report as printed, but mimeographed copies of these tables will be sent upon request (addressed to the National Research Council, B and 21st Streets, Washington, D. C.) to anyone desiring them.

and VIII give the distributions of the total cases by schools without regard to ages, Table VII showing the intelligence indices and Table VIII the educational. In each table we have first the thirteen day-schools with a total of 619 children and then the twenty-eight residential schools with a total of 3,813 children, making a grand total of 4,432 children. The distribution shows the number of cases for each five-step interval in the scale of indices from 1 to 100 together with a separate line for the zero indices. These zero indices indicate that the tests are too difficult for the children in question. We note that this is true only of 66 cases on the intelligence test, but the number mounts up to 140 cases on the educational test.

The last line of Table VII and the next to last line of Table VIII give the median indices for each school. The same information may be obtained from the "Totals" columns for the mental and educational tests, respectively, in Table VI. These medians admit of a comparison between schools with reference to mental ability on the one hand and educational achievement on the other. For example, the schools with the highest median intelligence, having medians of 57 and over, are D-2, D-3, D-4, D-8, D-10, R-11, R-7; the schools with the poorest intelligence, having indices below 40 are R-21 and R-10. There are obviously large differences in the general mental make-up of the children attending different schools. Between a school having an average mental index between 50 and 60, and a school having an average index between 30 and 40 there is a large difference. R-21 with the lowest median index of 38 has more than 50 per cent of its children in the backward and dull groups. Only 3 of the 92 children have mental indices above 60, i. e., bright or very bright. Obviously such a school is heavily handicapped in what it can accomplish educationally as contrasted with such a school as R-16 having about the same number of children but with a median mental index of 52.8. Instead of only 3 bright children, this school, R-16, possesses 29. While R-21 is loaded with 11 dull

children, R-16 has only 1 so classified. In this way we may make cross comparisons from school to school. The important point that emerges is, of course, that we cannot expect all schools to accomplish the same amount of educational work. What can be accomplished educationally is dependent upon the mental calibre of the children in the school.

Table VIII allows us to make the same kind of comparison between schools in regard to their educational achievement. Thus we note that D-11 has the highest educational median of 62 and this school is followed by D-12 with a median of 61.2 and so on. The lowest median is 37.8 for R-24.

The difference between the mental and educational medians will, however, be the best measure of the general efficiency of the school. These differences are shown in the last row of Table VIII. A plus difference indicates a better than usual educational achievement in terms of the mentality of the children; a minus difference indicates a poorer educational achievement in similar terms. The highest plus difference is + 10.1 for R-20, which indicates that this school is making better use of the mentality of its children than is usual among schools for the deaf. The lowest difference, — 7.5 (neglecting the — 15 for D-13 where there are only 4 children) is found in schools R-26 and R-27. The median mental index of both these schools is around 50, but both fall down 7.5 points in their median educational index. Now school R-2 has also a median mental index around 50, but its median educational index moves up 3.3 points instead of falling. With children of similar mentality obviously R-2 is accomplishing more educationally than either R-26 or R-27.

Comparison of Day and Residential Schools.—Comparing the general medians from day and residential schools, we find the day-school mental median of 53.3 contrasted with the residential mental median of 47.6. The residential schools are loaded with poorer mental material as contrasted with the day-schools. The educa-

TABLE IX

Number and Per Cent of Cases—Intelligence Indices

Group	Day		Residential	
	No.	%	No.	%
Dull	7	1.1	126	3.3
Backward	88	14.2	1,034	27.1
Normal	327	52.8	1,858	48.7
Bright	185	29.9	730	19.1
Very Bright	12	1.9	65	1.7
Total	619	99.9	3,813	99.9

tional median for the day-schools is 57.3 as contrasted with 46.3 for the residential. The day-schools are accomplishing more educationally. The difference for the day-schools is + 4, for the residential — 1.3. The day-schools are making better use of their mental material than are the residential schools.

The general mental calibre of the children in day and residential schools is shown by the summary in Table IX. The significance of the groups, Very Bright, Bright, etc., has already been explained. The day-schools have a larger percentage of bright and very bright, and the

TABLE X

Number and Per Cent of Cases—Educational Indices

Group	Day		Residential	
	No.	%	No.	%
Very Poor	16	2.6	194	5.1
Poor	82	13.2	1,108	29.1
Average	271	43.8	1,838	48.2
Good	226	36.5	634	16.6
Very Good	24	3.9	39	1.0
Total	619	100.0	3,813	100.0

TABLE XI

Intelligence Indices According to Age When Deafness Occurred

Intelligence Indices	Unknown	Birth	0-12 mo.	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
0- 19	7	23	9	3	2	3	3	.....	1	1	1	.....	.....	....	....	....	53
20- 39	53	264	46	55	47	20	9	9	9	9	5	2	2	1	....	....	531
40- 59	97	556	115	31	107	52	40	37	19	20	16	8	8	3	3	1	1,213
60- 79	43	269	48	62	42	27	22	26	13	11	10	7	7	2	1	....	590
80-100	1	17	4	3	3	2	1	2	.....	2	1	.....	.....	....	....	....	36
Total	201	1,129	222	254	201	104	75	74	42	43	33	17	17	6	4	1	2,423
Median	48.4	50.0	49.7	50.5	49.6	51.2	52.7	55.1	51.6	51.5	53.1	56.0	56.0	53	53	50	50.3

TABLE XII

Educational Indices According to Age When Deafness Occurred

Educational Indices	Unknown	Birth	0-12 mo.	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
0- 19	5	24	4	2	4	4	1	.....	.....	2	.....	.....	.....	....	....	....	46
20- 39	71	277	64	77	48	26	12	9	5	6	6	1	.....	....	....	....	602
40- 59	90	598	117	118	97	37	30	26	12	11	8	1	4	1	1	....	1,151
60- 79	35	220	36	55	49	37	31	34	22	19	15	12	11	5	3	1	585
80-100	.....	10	1	2	3	.....	1	5	3	5	4	3	2	....	....	....	39
Total	201	1,129	222	254	201	104	75	74	42	43	33	17	17	6	4	1	2,423
Median	45.5	48.8	47.4	48.1	50.0	51.9	56.3	61.2	63.6	62.6	63.3	71	68	68	67	70	49.8

residential schools have more of backward and dull. There are three times the percentage of dull in the residential as compared with the day-schools.

Table X gives the same type of comparison for the educational indices. The superior educational attainments of the day-schools is apparent, but of course they should do better inasmuch as they have children of higher mental ability.

Age of Deafness.—Information as to the age at which a child became deaf obtained by the survey allows us to raise the question as to what influence this may have upon our tests. Tables XI and XII give the desired information. Only the 12, 13, 14 and 15-year-olds were tabulated. These total 2,423 cases, or a little over 50 per cent of the total number of cases examined. Table XI shows the distribution of intelligence indices according to the age at which deafness was said to occur. The first column is for the unknown cases, i. e., cases for which no information was available; the second column for those reported deaf at birth; the third for those reported deaf during the first twelve months of life; the next for those reported deaf at age one, and so forth. Each column shows the number of cases for each twenty-point interval of our intelligence scale. The last row of the table gives the median intelligence index for each of these "age of deafness" groups.

Table XII shows the distribution of the same cases according to their educational index.

A study of the median indices of these different "age of deafness" groups is instructive. Figures 1 and 2 enable us to do this easily. The median intelligence index does not vary much as we read along the botton row of Table XI. This is shown by the almost horizontal line of Figure 1. The index for most groups is very close to fifty or normal all along the line. So far as intelligence is concerned, we seem to have a similar distribution at each "age of deafness." Having possessed hearing for

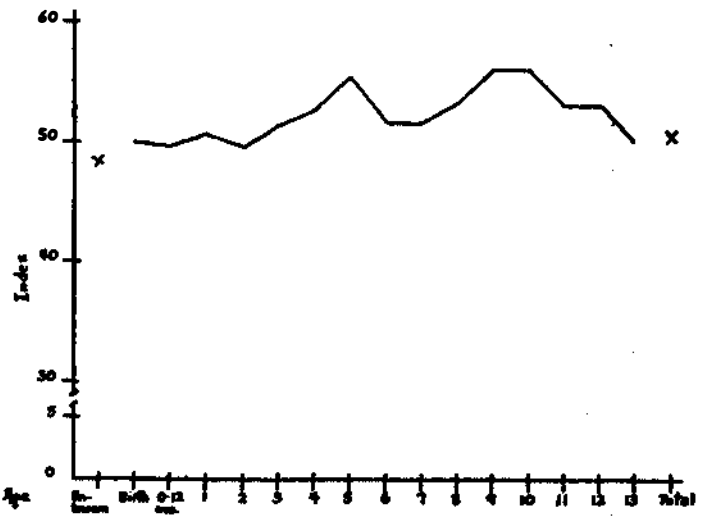

Figure 1

Median Intelligence Index According to Age of Deafness

so many years of life seems to have no effect upon the ability to succeed in the non-language test.

If now we turn to the medians of the educational indices in Table XII, we note a tendency for these to increase as the age at which deafness occurred increases. This is shown by the rise of the curve in Figure 2. The later the "age of deafness," the higher is the child likely to score on the educational test. Each year of hearing after age one seems to give a better chance for educational achievement. This must undoubtedly be connected with the language ability of the child. In hearing children speech begins at about 12 months, increasing rapidly thereafter. Each year of speaking and hearing gives the child a rapidly increasing vocabulary, such as the child born deaf cannot obtain. The advantage of thus acquiring some language before deafness sets in, is seen reflected in the distinct increase of the medians in Table XII and Figure 2. The marked rise in the curve occurs at age 4.

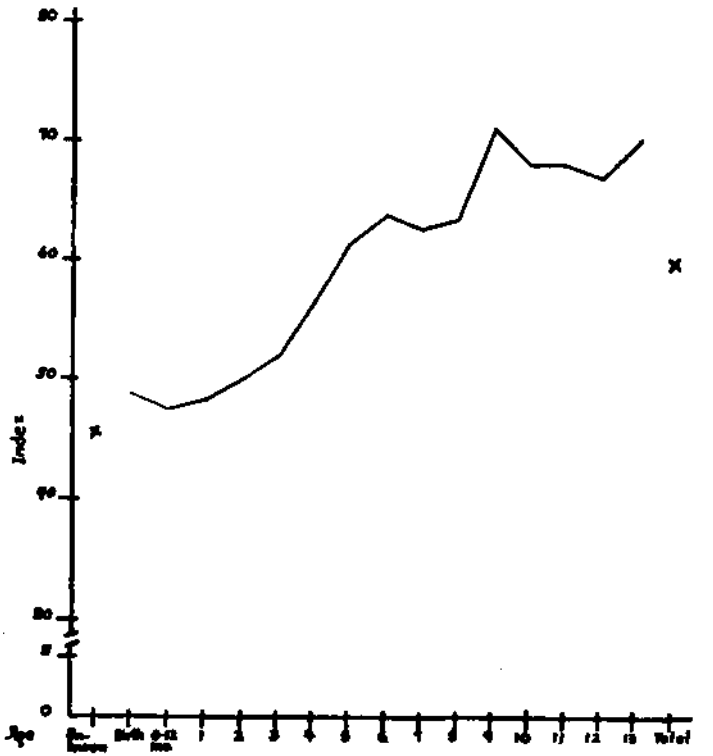

Figure 2

Median Educational Index According to Age of Deafness

In the Reamer report, age six was found to be the significant age. In a study by Pintner and Paterson[12] age 4 or 5 was found to be significant. They say "Children who lost their hearing before the age of four or five are very little, if at all, benefited, as far as language ability is concerned, by having once possessed hearing." In general, therefore, the results of the present survey agree well with previous findings.

Method of Instruction.—All the 12, 13, 14 and 15-

[12]Pintner, R., and Paterson, D. G., "A Measurement of the Language Ability of Deaf Children," *Psychological Review*, November, 1916 (vol. xxiii, no. 6), pp. 413-436.

year-old children, totaling 2,423 cases, were divided into three groups according as the method of instruction seemed to be predominantly oral or manual or combined. The oral cases numbered 1,845 or 76 per cent of the total; the manual cases numbered only 186 or 7.7 per cent of the total; the combined cases numbered 392 or 16.3 per cent of the total.

Table XIII shows the distribution by number and per cent of intelligence indices in ten-step intervals for the three methods of instruction, oral, manual, combined. The fourth column contains the manual and combined cases thrown together. The last column shows the distribution of the total 2,423 cases. The highest median index is for the oral group. It is about 10 points above the manual and about 5 points above the combined, and 2 points above the median of the total group.

There would seem, therefore, to be a distinct tendency for the more intelligent children to be chosen for oral instruction. This tendency may not be a conscious policy in all schools. Such a differentiation will, of course, not exist in a school where all the children are given oral instruction.

A further inspection of the percentages of the dis-

TABLE XIII

Intelligence Indices According to Methods of Instruction

Intelligence Indices	Oral		Manual		Combined		Manual and Combined		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
0– 9	9	.5	4	2.2	2	.5	6	1.0	15	.62
10– 19	20	1.1	11	5.9	9	2.3	20	3.5	40	1.65
20– 29	89	4.8	28	15.1	41	10.4	69	11.9	158	6.52
30– 39	247	13.4	44	23.7	82	20.9	126	21.8	373	15.39
40– 49	459	24.9	51	27.4	90	22.9	141	24.4	600	24.76
50– 59	498	27.0	28	15.1	84	21.4	112	19.4	610	25.18
60– 69	357	19.3	13	7.0	53	13.5	66	11.4	423	17.46
70– 79	139	7.5	6	3.2	23	5.9	29	5.0	168	6.93
80– 89	20	1.1	1	.5	5	1.3	6	1.0	26	1.07
90–100	7	.4	0	0	3	.8	3	.5	10	.41
Total...	1,845	100.0	186	100.1	392	99.9	578	99.9	2,423	99.99
Median.	52.0	.....	41.2	.....	46.9	.....	44.8	.....	50.4	.....

tribution table shows that 8.1 per cent of the manual and 2.8 per cent of the combined have indices below 20, i. e., have decidedly poor intelligence, whereas only 1.6 per cent of the oral are so classified. Evidently the oral method is not considered good for dull pupils, or else it has not been properly adapted to them. Again the oral method contains much larger percentages of pupils in the brighter groups (with indices above 60) than does the manual method; the oral having 28.3 per cent above an index of 60, as contrasted with the manual having 10.7 per cent so classified. This tendency of the oral

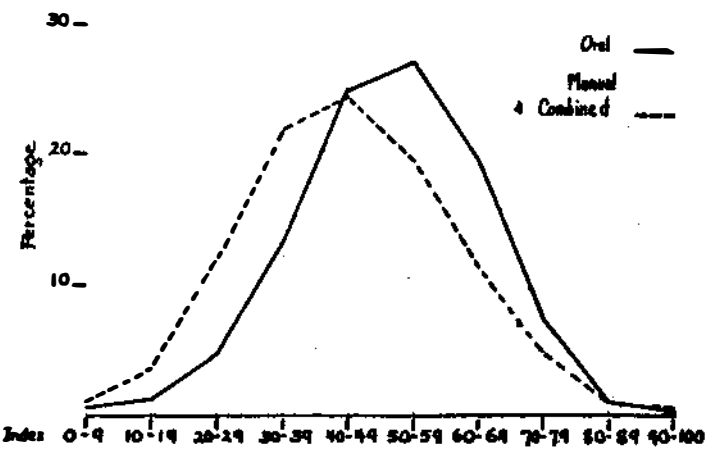

Figure 3

Comparison of Oral and Other Methods—Intelligence

method to select the brighter pupils is shown by the percentage distribution curves in Figure 3. Of course, the outstanding fact in the diagram is the great overlapping of the two groups, oral and otherwise. If any method of instruction is better adapted to a certain degree of intelligence or not, we do not know. The diagram shows all methods of instruction being indiscriminately taught to all types of intelligence.

Table XIV shows the educational indices according to

TABLE XIV

Educational Indices According to Methods of Instruction

Educational Indices	Oral		Manual		Combined		Manual and Combined		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
0– 9	13	.7	7	3.8	5	1.3	12	2.1	25	1.03
10– 19	13	.7	4	2.2	5	1.3	9	1.6	22	.91
20– 29	109	5.9	28	15.1	33	8.4	61	10.5	170	7.02
30– 39	286	15.5	56	30.1	88	22.5	144	24.9	430	17.75
40– 49	420	22.8	51	27.4	106	27.0	157	27.2	577	23.81
50– 59	472	25.6	30	16.1	75	19.1	105	18.2	577	23.81
60– 69	304	16.5	8	4.3	57	14.5	65	11.2	369	15.23
70– 79	195	10.6	2	1.1	18	4.6	20	3.5	215	8.87
80– 89	19	1.0	0	0	3	.8	3	.5	22	.91
90–100	14	.8	0	0	2	.5	2	.3	16	.66
Total...	1,845	100.1	186	100.1	392	100.0	578	100.0	2,423	100.0
Median.	51.7	.....	39.6	.....	46.1	.....	44.0	.....	49.8	.....

method of instruction. The median educational index for the oral group is 51.7, higher than for the others, as it should be because of the higher intelligence of the oral group. Figure 4 shows the comparison between the oral and other groups. This figure is essentially the same as Figure 3 for the intelligence indices. If now, the oral method was producing much better language achievement than the other methods, it should be evident in our

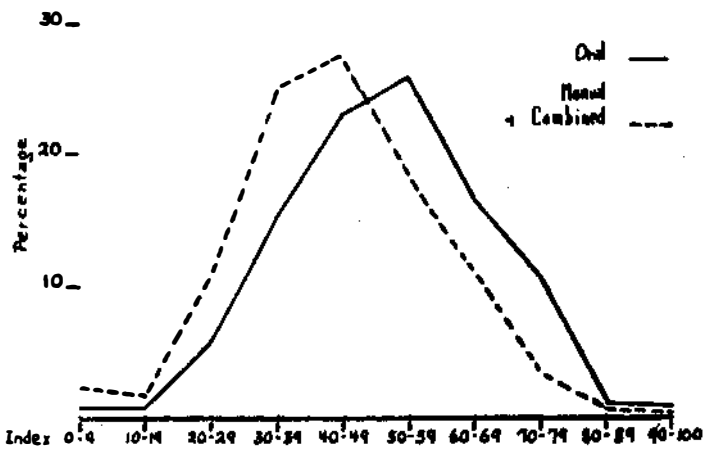

Figure 4

Comparison of Oral and Other Methods—Education

table and diagram. We note, however, all three methods are doing just about what is to be expected according to the mentality of the pupils. Compare the median educational index of 51.7 with the intelligence index of 52.0 for the orals. The difference is negligible. Superior language work from oral instruction would have raised the educational index much above the mental. This is not the case. Similar comparisons of the educational and mental indices of the manual and combined methods also show negligible differences. The conclusion must be that no one method is superior to the others with reference to the educational achievement of the pupils, when we take into consideration their basic intelligence.

Comparison of Deaf and Hearing Children.—All the 12, 13, 14 and 15-year olds were used in a comparison between deaf and hearing children. These ages are most representative of the deaf children tested in the survey. There are between 500 and 600 deaf children for each of these ages. The hearing children, with which these deaf children are compared, consist of the random sampling of children by means of which the intelligence and educational tests have been standardized. There are over a thousand of such children for ages 12, 13 and 14, and 700 for age 15. The samplings of deaf and hearing children are probably fairly representative samplings of such children in the United States. The poorest sampling is undoubtedly the group of fifteen-year-old hearing children. This group is smaller than the other hearing groups and probably does not contain a sufficient number of superior intelligence, because it is largely, but not entirely, made up of pupils in the elementary schools. The predominance of elementary school children in general in the hearing group would tend to depress the hearing norms, if such were the case. At any rate we may be sure that these norms are not in any way artificially increased, and, therefore, the deaf children are not being compared with superior hearing children.

TABLE XV

Distribution of Intelligence Scores—Deaf

Scores	Ages				
	12	13	14	15	Total
0– 99	51	51	43	35	180
100–199	106	106	88	65	365
200–299	187	188	197	116	688
300–399	160	176	199	225	760
400–499	43	77	142	126	388
500–599	.....	10	8	23	41
600–up	.....	.....	1	.....	1
Total	547	608	678	590	2,423
Mean...	257.7	275.6	300.5	320.1	289.4
σ.....	108.6	113.2	116.0	118.9	116.7
σm.....	4.64	4.59	4.46	4.89	2.37

TABLE XVI

Distribution of Intelligence Scores—Hearing

Scores	Ages				
	12	13	14	15	Total
0– 99	19	18	7	13	57
100–199	142	80	57	41	320
200–299	349	254	179	108	890
300–399	562	558	441	254	1,815
400–499	265	334	381	233	1,213
500–599	24	51	55	51	181
600–up	.....	.....	.....	.....	.....
Total	1,361	1,295	1,120	700	4,476
Mean...	321	348	362	364	.....
σ.....	97	96	91	99	.....
σm.....	2.6	2.7	2.7	3.7	.....

The Intelligence Test.—Tables XV and XVI show the distribution of scores for deaf and hearing children. At the bottom of each table the means and standard devia-

tions are given. A comparison of the means shows an appreciable difference between the average deaf and hearing child at each of the four ages with reference to intelligence. The differences between the means, the standard deviations of the differences and the ratios of the difference to the standard deviation are given below:

Ages	12	13	14	15
Difference of means....	63.3	72.4	61.5	43.9
Standard deviations....	5.22	5.32	5.31	6.13
Ratios	12.12	13.59	11.59	7.16

These ratios show clearly that we are not here dealing with chance differences.

Another way of comparing the deaf and hearing is to interpret the means of the deaf in terms of the means of the hearing. The mean score of the 12-year-old deaf

TABLE XVII
Percentage Distribution of Intelligence Scores—Deaf

Scores	Ages				
	12	13	14	15	Total
0– 99	9.3	8.4	6.3	5.9	7.43
100–199	19.4	17.4	13.0	11.0	15.06
200–299	34.2	31.0	29.0	19.7	28.39
300–399	29.3	28.9	29.0	38.1	31.36
400–499	7.9	12.6	20.9	21.4	16.01
500–599	.....	1.7	1.2	3.8	1.69
600–up	.....	.....	.2	.....	.04
Total	100.1	100.0	99.9	99.9	99.98

is 258 and this is about the mean for the 10-year-old hearing children; the mean for 13-year-old deaf is 276, about the mean for 10½-year-old hearing; the mean for 14-year-old deaf is 300, about the mean for 11-year-old hearing; and the mean for 15-year-old deaf is 320, about the mean for 12-year-old hearing.

Tables XVII and XVIII show the same comparison between deaf and hearing in terms of percentage of chil-

TABLE XVIII

Percentage Distribution of Intelligence Scores—Hearing

Scores	Ages				
	12	13	14	15	Total
0– 99	1.4	1.4	.6	1.9	1.3
100–199	10.4	6.2	5.1	5.9	6.9
200–299	25.7	19.6	16.1	15.5	19.2
300–399	41.4	43.0	39.3	36.3	40.0
400–499	19.4	25.8	33.9	33.3	28.1
500–599	1.8	3.9	4.9	7.2	4.5
600–up	.....	.....	.....	.....	.....
Total	100.1	99.9	99.9	100.1	100.0

dren for each score interval and Figures 5, 6, 7 and 8 give the same comparison graphically. These figures show clearly the superiority of the hearing to the deaf child. There are always larger percentages of deaf at the lower scores and larger percentages of the hearing at the higher scores.

The Educational Test.—Tables XIX and XX show the distribution of scores for the deaf and the hearing on the educational test. At the bottom of each table the means and standard deviations are given. A comparison of the means shows a very considerable difference between the average deaf and hearing child at each of the four ages with reference to educational achievement. The differences between the means, the standard deviations of these differences and the ratios of difference to standard deviation are given below:

Ages	12	13	14	15
Difference of means..	39.2	42.8	41.2	37.6
Standard deviations..	.836	.865	.876	1.131
Ratios	46.89	49.48	47.032	33.244

These ratios clearly show that we are here dealing with differences very much greater than chance would offer.

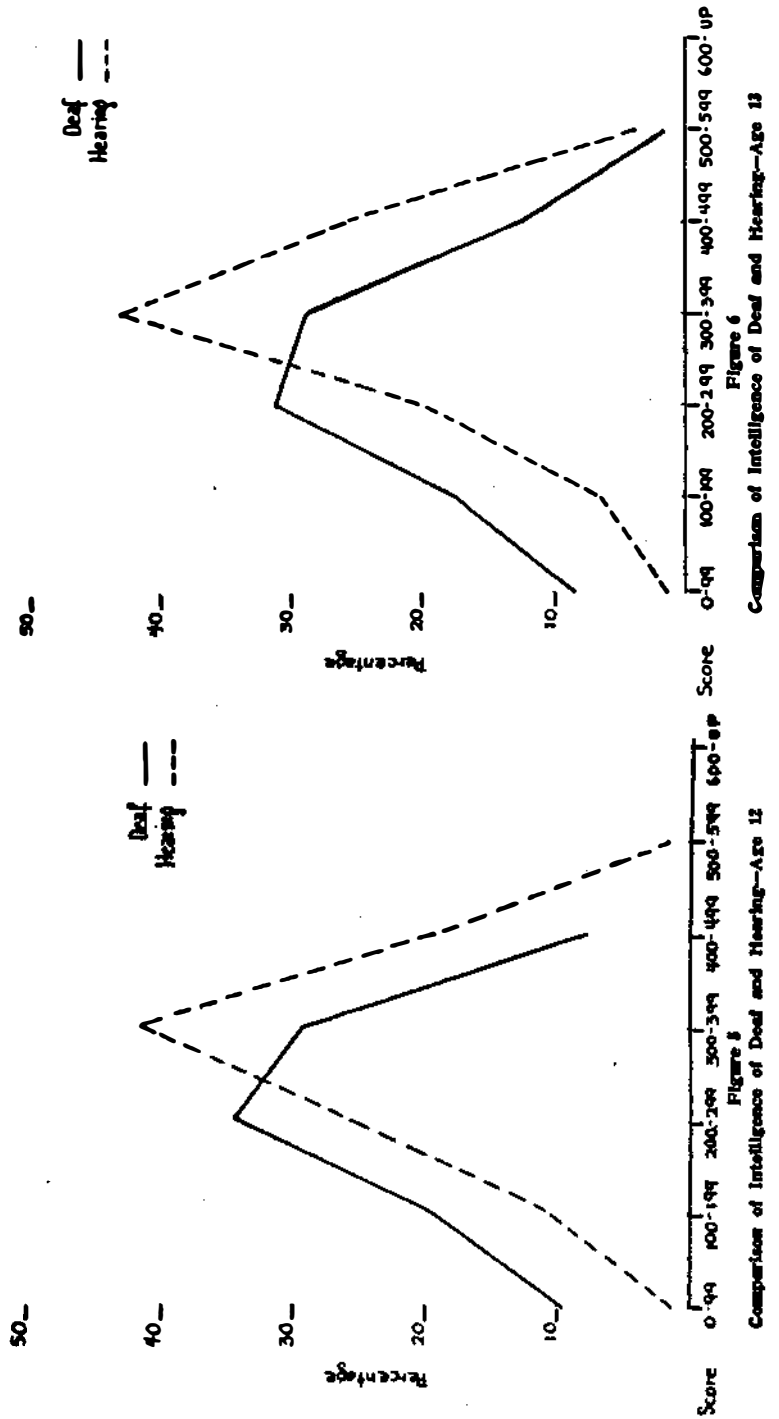

Figure 5
Comparison of Intelligence of Deaf and Hearing—Age 12

Figure 6
Comparison of Intelligence of Deaf and Hearing—Age 13

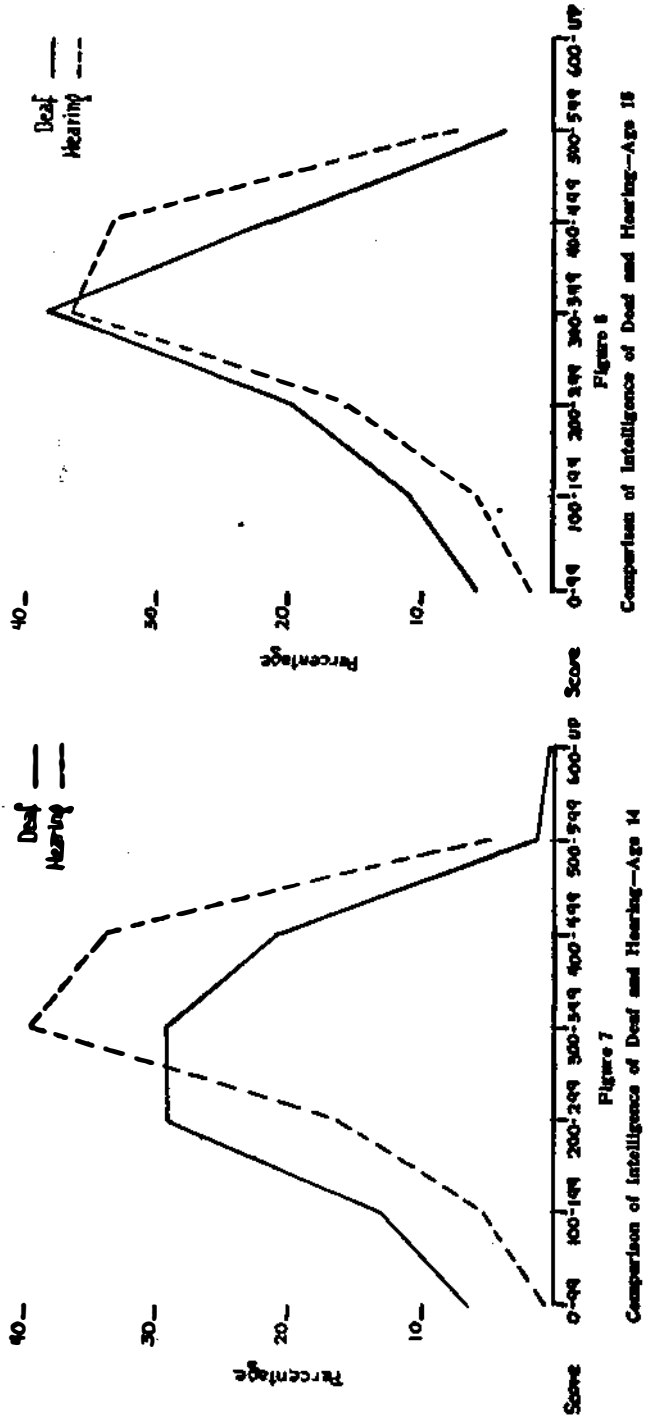

Figure 7
Comparison of Intelligence of Deaf and Hearing—Age 14

Figure 8
Comparison of Intelligence of Deaf and Hearing—Age 15

TABLE XIX

Distribution of Educational Scores—Deaf

Scores	Ages				
	12	13	14	15	Total
0– 19	402	374	362	255	1,393
20– 39	111	173	208	204	696
40– 59	22	43	78	91	234
60– 79	9	13	20	28	70
80– 99	3	5	10	12	30
100–119	.....	.....	.....	.....	.....
120–	.....	.....	.....	.....	.....
Total	547	608	678	590	2,423
Mean...	15.8	19.2	22.8	27.4	20.47
σ.....	14.8	16.3	18.0	19.74	17.8
σm.....	.63	.66	.69	.81	.36

TABLE XX

Distribution of Educational Scores—Hearing

Scores	Ages				
	12	13	14	15	Total
0– 19	64	35	17	21	137
20– 39	254	146	93	63	556
40– 59	475	391	313	188	1,367
60– 79	411	463	473	269	1,616
80– 99	150	245	211	136	742
100–119	7	15	13	22	57
120–139	.....	.....	.....	1	1
Total	1,361	1,295	1,120	700	4,476
Mean...	55	62	64	65	.....
σ.....	20.1	20.2	18.1	21.0	.....
σm.....	0.55	0.56	0.54	0.79	.....

Again comparing the deaf means in terms of the age means for the hearing, we find that the 12-year-old deaf mean of 16 is not quite up to the 8-year-old hearing mean;

TABLE XXI

Percentage Distribution of Educational Scores—Deaf

Scores	Ages				
	12	13	14	15	Total
0– 19	73.5	61.6	53.4	43.2	57.49
20– 39	20.3	28.4	30.7	34.6	28.71
40– 59	4.0	7.1	11.5	15.4	9.65
60– 79	1.6	2.1	2.9	4.8	2.88
80– 99	.6	.8	1.4	2.0	1.23
100–119	.....	.....	.....	.....	.....
120–	.....	.....	.....	.....	.....
Total	100.0	100.0	99.9	100.0	99.96

TABLE XXII

Percentage Distribution of Educational Scores—Hearing

Scores	Ages				
	12	13	14	15	Total
0– 19	4.7	2.7	1.5	3.0	3.0
20– 39	18.6	11.3	8.3	9.0	11.8
40– 59	34.9	30.2	27.9	26.9	30.0
60– 79	30.2	35.8	42.2	38.5	36.7
80– 99	11.0	19.0	18.8	19.4	17.1
100–119	.5	1.1	1.2	3.2	1.5
120–up.	.....	.....	.....	.1	.03
Total	99.9	100.1	99.9	100.1	100.1

the 13-year-old deaf mean of 19 is just one point above the hearing 8-year-mean; the 14-year-old deaf mean of 23 is not quite up to the hearing 9-year-old mean; and the 15-year-old deaf mean of 27 is just equal to the 9-year-old hearing mean. In other words the average deaf child from 12 to 15 achieves on the educational tests what the 8 or 9-year-old hearing child achieves. The retardation

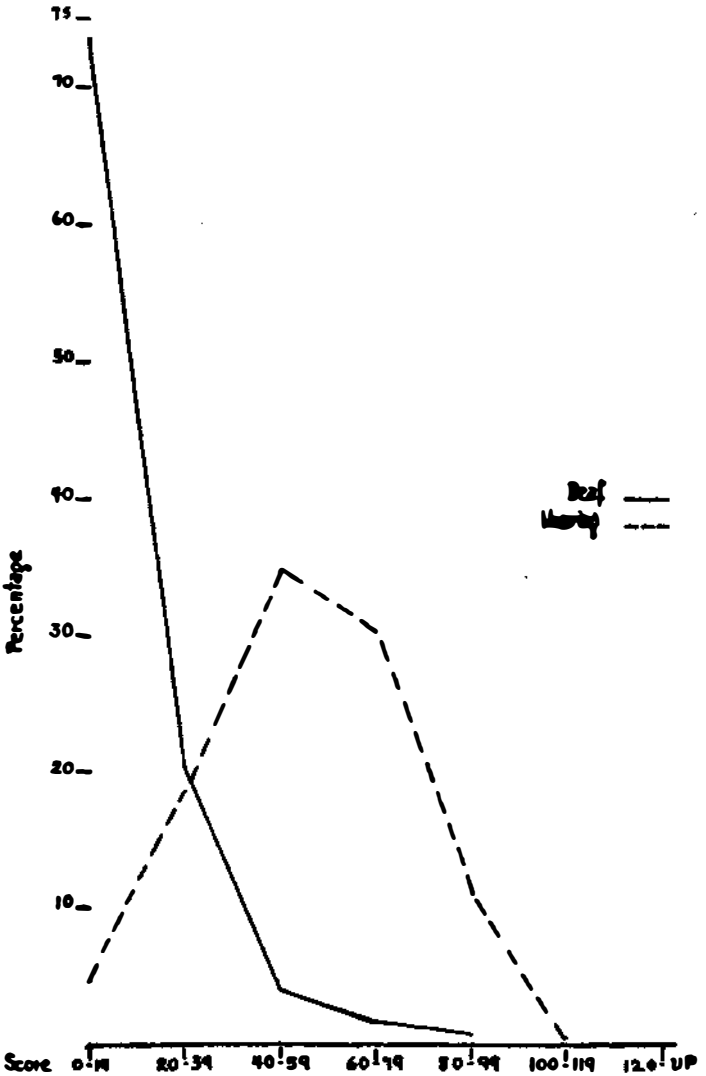

Figure 9
Comparison of Education of Deaf and Hearing—Age 12

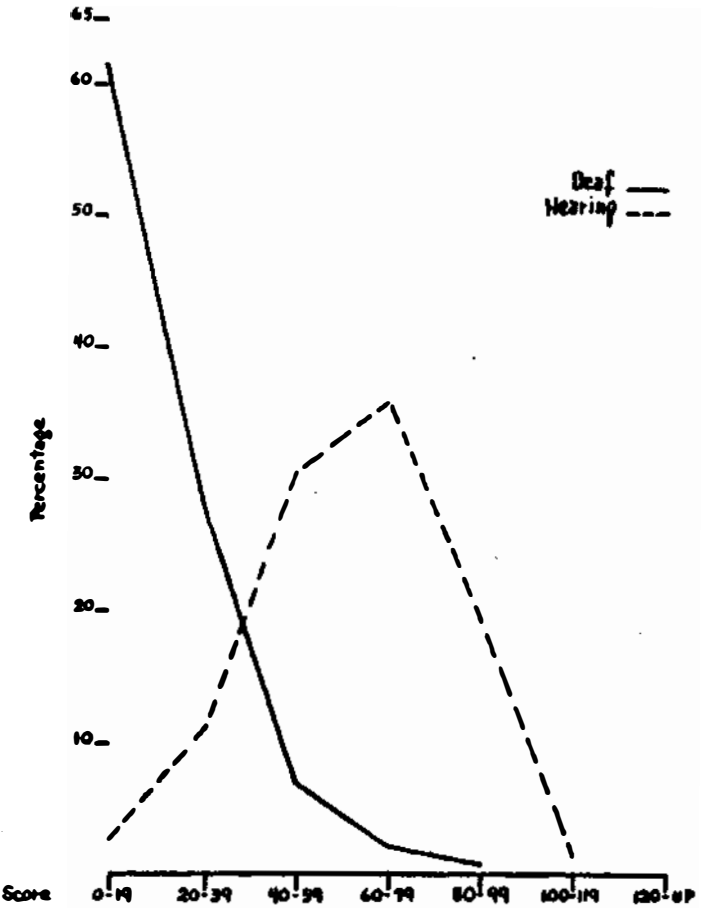

Figure 10

Comparison of Education of Deaf and Hearing—Age 13

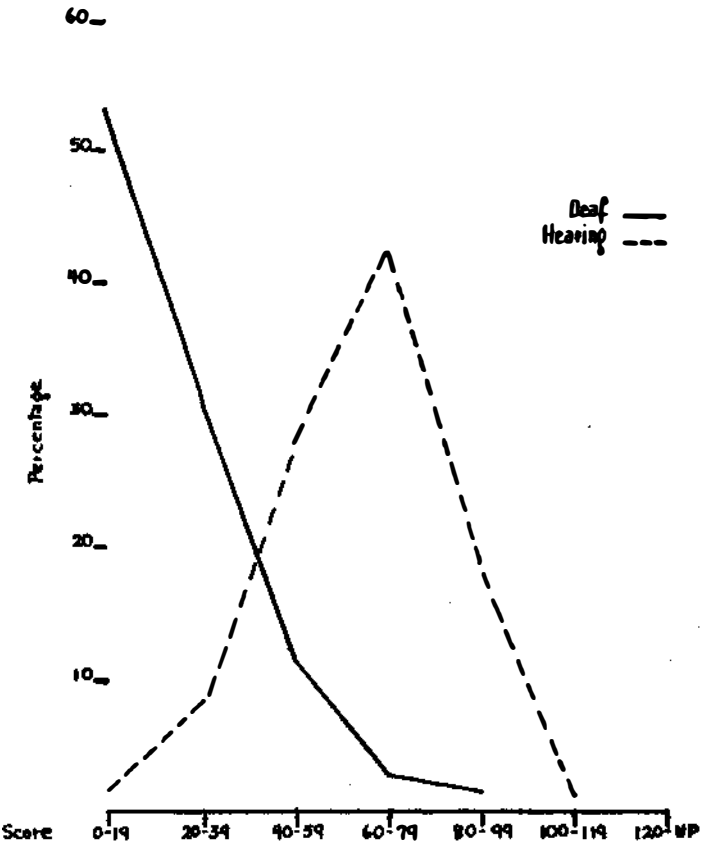

Figure 11
Comparison of Education of Deaf and Hearing—Age 14

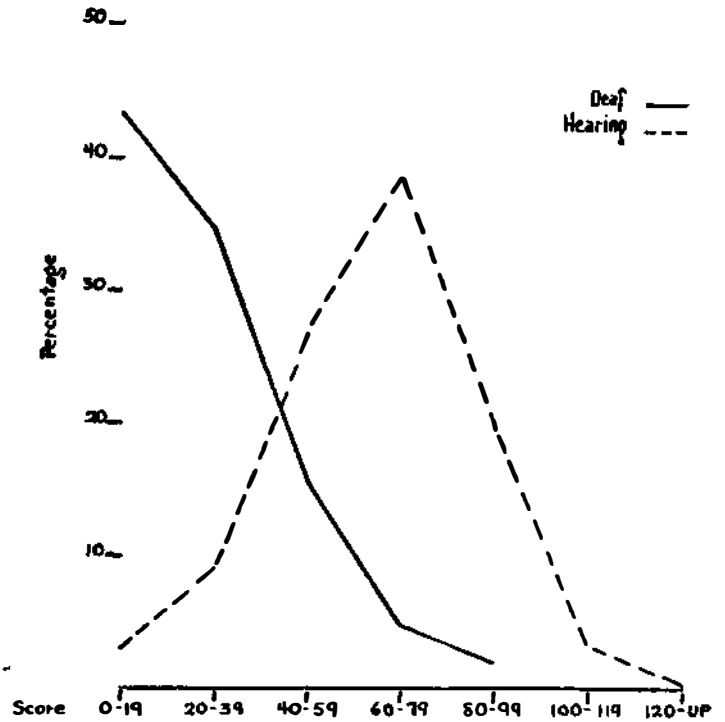

Figure 12

Comparison of Education of Deaf and Hearing—Age 15

here is much more marked than is the case in the intelligence test.

Tables XXI and XXII show the same comparison between the deaf and the hearing in terms of percentages of children for each score interval and Figures 9, 10, 11, and 12 show the same comparisons graphically. Here the great difference between the deaf and hearing is apparent. As a matter of fact, the graphs show a very large percentage of deaf children scoring less than 20 points, whereas very few hearing children score so low. Very few deaf children exceed 80 points on the test, but a considerable number of hearing children do so.

TABLE XXIII

Median Scores by Ages and Schools—Intelligence

Schools	Ages															
	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	30
D- 1	240	291	374	389	455	441	375	...	...	...	...	...	...	...	...	...
D- 2	309	388	349	378	392	485	450	497	467	...	...	...	...	...	...	...
D- 3	303	398	381	429	384	337	239	...	...	...	...	...	...	...	...	...
D- 4	385	450	459	...	358	365	...	...	...	...	...	...	...	...	...	...
D- 5	272	420	...	364	180	365	...	110	...	...	...	...	...	...	...	...
D- 6	187	302	378	421	398	...	...	...	...	...	...	...	...	...	...	...
D- 7	297	302	329	338	374	383	239	338	...	...	...	...	...	...	...	...
D- 8	337	398	378	452	403	441	...	...	252	...	...	...	...	...	...	...
D- 9	303	402	349	296	358	232	...	375	344	...	...	...	...	...	...	...
D-10	366	327	348	319	417	470	525	412	...	...	...	...	...	...	...	...
D-11	292	260	...	319	414	365	...	...	...	...	...	...	...	...	...	...
D-12	337	330	371	331	...	322	210	180	288	430	...	...	...	...	...	...
D-13	...	...	...	362	...	382	409	...	...	...	...	...	...	...	...	...
R- 1	278	245	290	384	334	335	292	302	270	328	275	328	...	...	...	...
R- 2	296	280	364	364	369	367	377	248	90	...	...	...	...	...	...	...
R- 3	219	239	277	278	335	...	340	...	365	278	...	403	403	...	...	...
R- 4	314	316	328	391	347	385	329	391	387	428	...	...	...	...	...	...
R- 5	265	369	381	342	416	402	427	330	180	363	275	...	...	...	...	...
R- 6	247	316	380	319	382	439	451	493	437	463	336	...	...	...	...	...
R- 7	436	558	434	462	502	459	439	500	440	...	...	...	...	...	...	...
R- 8	310	305	330	342	329	340	396	415	449	428	310	280	280	...	...	...
R- 9	325	330	350	345	486	444	...	250	558	...	...	...	...	...	...	...
R-10	217	286	263	212	265	370	245	307	309	322	275	...	...	...	275	...
R-11	317	302	308	410	429	503	460	391	...	...	...	...	...	...	...	...
R-12	295	233	360	302	371	340	260	270	275	...	...	...	...	...	...	...
R-13	236	257	337	362	389	324	396	419	433	402	365	140	412	278	...	...
R-14	335	351	325	366	390	408	389	423	420	402	412	...	...	...	...	...
R-15	257	265	292	380	332	435	375	375	310	412	...	...	...	...	...	...
R-16	309	291	358	365	358	391	485	350	351	321	...	...	...	...	...	...
R-17	239	288	269	319	345	335	368	351	384	463	...	...	...	...	...	...
R-18	235	333	315	319	327	380	350	395	316	428	...	...	...	...	...	...
R-19	294	369	363	383	358	385	405	390	387	403	270	...	...	...	...	...
R-20	200	351	320	286	363	325	375	410	490	329	...	...	...	...	...	...
R-21	125	238	247	302	298	355	335	315	282	235	275	100	265	...	...	...
R-22	235	352	315	314	358	470	315	375	...	...	...	...	...	...	...	...
R-23	341	402	395	394	369	340	328	451	451	...	...	...	...	...	...	...
R-24	235	265	270	294	322	295	391	262	326	334	428	275	...	190	...	396
R-25	310	334	360	370	331	374	308	412	321	428	...	220	...	...	...	...
R-26	295	291	341	328	369	292	287	439	310	428	...	...	...	...	...	...
R-27	230	399	315	366	445	505	366	389	558	...	...	...	...	...	...	...
R-28	278	260	267	250	268	338	415	350	283	363	275	...	...	...	...	...

TABLE XXIV

Median Scores by Ages and Schools—Education

Schools	Ages													
	12	13	14	15	16	17	18	19	20	21	22	23	24	25
D- 1	11	20	27	21	31	48	19	...	...	...	...	...	...	...
D- 2	14	18	22	15	34	65	14	53	32	...	...	...	...	...
D- 3	28	30	32	36	31	59	8	...	...	...	...	...	...	...
D- 4	28	30	69	...	22	30	...	...	...	...	...	...	...	...
D- 5	18	16	...	25	23	32	...	...	...	...	...	...	...	...
D- 6	18	19	30	36	52	...	...	...	...	...	...	...	...	...
D- 7	15	25	30	25	31	32	32	24	...	...	...	...	...	...
D- 8	30	27	40	47	38	52	...	...	40	...	...	...	...	...
D- 9	11	34	30	55	34	32	...	32	39	...	...	...	...	...
D-10	29	23	24	39	40	47	72	48	...	...	...	...	...	...
D-11	20	22	...	60	45	32	...	...	...	...	...	...	...	...
D-12	28	36	47	36	...	34	44	15	18	49	...	...	...	...
D-13	...	...	...	11	...	32	14	...	...	...	...	...	...	...
R- 1	9	14	22	25	17	25	31	43	33	18	37	27	...	...
R- 2	22	32	27	25	31	39	27	32	22	...	...	...	...	...
R- 3	6	14	18	27	17	...	13	...	38	22	...	18	27	...
R- 4	16	19	21	33	19	22	39	41	34	48	...	...	...	...
R- 5	20	28	27	24	51	47	51	32	34	37	50	...	...	...
R- 6	13	17	22	15	29	34	33	48	49	42	34	...	...	...
R- 7	...	...	30	90	78	86	76	89	87	74	74	...	...	...
R- 8	15	25	26	20	29	42	53	43	47	29	20	81	6	...
R- 9	12	15	35	47	33	34	...	23	52	...	...	...	...	...
R-10	11	15	20	9	17	36	25	24	29	25	23	...	...	...
R-11	20	22	30	39	39	59	47	41	...	...	...	...	...	...
R-12	12	14	22	20	23	25	30	18	20	...	...	...	...	...
R-13	10	13	26	33	31	26	40	48	42	49	18	19	23	19
R-14	16	22	26	27	31	42	46	49	49	64	34	...	...	...
R-15	14	12	21	17	17	36	27	27	22	37	...	...	...	...
R-16	15	13	27	21	23	34	38	34	32	50	...	...	...	...
R-17	14	16	18	20	29	27	45	46	40	50	...	...	...	...
R-18	15	20	26	20	27	35	43	39	32	10	...	...	...	...
R-19	14	35	22	22	22	28	27	48	34	24	9	...	...	...
R-20	23	30	29	15	37	27	32	58	42	49	...	...	...	...
R-21	5	13	18	17	14	20	25	22	18	18	27	10	27	...
R-22	23	25	29	25	29	46	46	42	...	...	...	...	...	...
R-23	20	22	40	28	43	27	43	43	49	...	...	...	...	...
R-24	7	11	15	15	19	26	40	18	20	23	13	28	...	23
R-25	14	22	26	20	25	31	22	41	30	58	...	23	...	...
R-26	11	13	24	12	21	23	26	73	18	29	...	...	...	...
R-27	7	17	30	20	24	63	32	46	72	...	...	...	...	...
R-28	13	14	21	16	19	28	27	32	25	27	18	...	...	...

Age-Scores by Schools.—To add to any further comparison of deaf and hearing children that might be desired, Tables XXIII and XXIV give the median crude scores for each age for each school for the two tests. These medians are approximations and have been calculated from the median indices in the original distribution of indices by schools.

Intelligence and Attainment.—The significant retardation of the deaf as contrasted with the hearing is not so much their retardation in intellectual development as measured by the Non-Language Test, but rather their great retardation in educational achievement. A cursory inspection of the educational tests shows a very marked tendency for the deaf child to respond rather than to refrain in case he is doubtful of the correct answer. There seems to be a lack of what Binet called autocriticism. The deaf child seems less critical of his responses, as compared with the hearing child. Often the examiner can see absolutely no connection between the response and the stimulus. Samples taken at random follow.

Geography.—

Question: In what direction are you facing when your back is toward the north?

Answers: In two.
In what direction.
New York City.
America.
The facing North.
Front hall.
Woman same.
You facing.

Question: Name two reasons why cities usually grow up at falls in rivers.

Answers: Autumn.
Ural mountains and Ural river.
The brother and living.

No.
Boys.

Completion Sentences.—The italicized words are the completions added by deaf children.

We are going *in class* school.
The sky *I have* blue.
The poor baby *and* as if it were *Dick* sick.
A home is *girl* merely a place *will go* one *home* live comfortably.
The girl plays *girls* her dolls all day.
The *boys* plays *with* her dolls all day.
Boys and *Jim* soon become *lady* and women.
The poor little *baby* has *did* nothing to *did not;* he is hungry.
The poor child *well* as if it were *very* sick.
We are going *will go* school.
The sky *been* blue.
The sky *red and* blue.
We are going *yes* school.
The sky *dress* blue.
The poor baby *girl* as if it were *baby* sick.

Summary.—

1. The Pintner Non-Language Mental Test and the Pintner Educational Survey Test were given to a wide sampling of deaf children.
2. These two tests have been found to be valid and reliable measuring instruments for both deaf and hearing children.
3. The children tested numbered 4,432, from thirteen day-schools and twenty-eight residential schools for the deaf.
4. The geographical distribution of the children tested conforms fairly well to the geographical distribution of the total number of deaf persons as reported by the census of 1920.
5. The children tested are all twelve years of age or

older. Younger children were not included because the tests would not have been very suitable for them.

6. The distribution of children by ages seems to indicate that the residential schools tend to keep their children much longer than the day-schools.
7. The norms for deaf children used in this report are based upon the children tested in this survey.
8. Distribution tables showing the mental and educational indices for each age-group for each school have been prepared.
9. A comparison of the efficiency of schools is made possible by means of the differences between the mental and educational medians for each school.
10. Day-schools seem to be achieving more educationally than residential schools.
11. Day-schools possess in general a larger percentage of children of higher mental calibre than do the residential schools.
12. The age at which deafness occurs has little influence on the mental rating, but a decided influence on the educational rating. Each year of hearing after age 4 seems to give an increased facility in language as measured by the educational test.
13. None of the three general methods of instruction, oral, manual or combined, seems to be superior to the others when the intelligence of the child is taken into account.
14. A comparison of the intelligence ratings for the deaf and hearing at ages 12 to 15, inclusive, shows a distinct superiority for the hearing.
15. A similar comparison of the educational ratings shows a very marked superiority for the hearing, much greater than for intelligence.

Conclusion.—The outstanding feature of this analysis of the educational and intelligence ratings of deaf children is the very marked divergence of the deaf and hearing in

regard to educational attainment, a divergence markedly greater than the divergence between the two groups intellectually. The problem in the education of the deaf would therefore seem to be to close this educational gap between the deaf and the hearing until it becomes no wider than the gap which exists between the intelligence of the deaf and that of the hearing. How this should be done, if it is indeed possible, cannot be determined by any such survey as we have made. The survey can only point out the conditions that at present exist. Knowing the conditions, however, the way is now clear for further and prolonged investigation and experiment.

Personal suggestions of the writer may here be in order. Questions such as the following should be faced. Would the education of the deaf child be accelerated if it were begun at a much earlier age than is now customary? The most modifiable years of a child's life are the earlier years, and most deaf children spend these without any systematic education. Could not reading be taught earlier and more efficiently than at present, so that the deaf children might get a better start with this basic tool? May not the enthusiasm of the oralists have led them to spend too much time in speech and lip-reading at an age when this basic tool of reading should receive more attention? Is the curriculum of the average school for the deaf developing in the light of modern curriculum research in the school for the hearing? Is the average teacher of the deaf being trained as well as she should be? Is she getting as good a training for her work as the teacher in the ordinary school for the hearing?

These and many other questions arise in working up the results of a survey like this. Obviously, answers to these questions can come only through long and extended research. This survey will have achieved its purpose if it stimulates such research.

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