Dr. Lowrey: I regret to say that we have not been able to begin the study of the children as yet, but we are trying to do so beginning next week. The indications are that there are anywhere from 150 to 200 children ready to be sent to us.

The Chairman: On behalf of the Board of Control, the superintendents of the institutions, and all present, I want to thank Dr. Ball, Dr. Sweeney and Dr. Lowrey for the splendid presentation of their subject, What Science Can Do for the Feebleminded. The information which they have given us this morning is going to be very helpful, I am sure. We thank them for giving of their time, their training and their experience.

AFTERNOON SESSION

The Chairman: I think probably the speaker of the afternoon needs no introduction to this audience. Most of you are acquainted with the work Dr. Kuhlmann has done in Minnesota. He came here in 1910, I believe, to take charge of the department of research at the School for Feeble-Minded at Faribault. He was connected with the School in his research work until 1921, when the department was removed to the Capitol, and he has since continued his work not only with the School but with other organizations as well. Many of you know that he had charge of the psycho-educational clinic at the University, co-operating with the medical department, for several years. Dr. Kuhlmann's work in the past few years has been not only research work, but he has been editing the results of his research and has published a book on mental tests and a good many leaflets on the subject which he has been studying here in Minnesota.

Recently members of the Board and one of our superintendents visited the psychopathic hospital in Boston, and while going through we were introduced to various members of the staff. Going into one department we met Dr. Walker, and when she was told that we were from Minnesota, she said: "I was just reading a book by one of your Minnesota people. It is Dr. Kuhlmann's book on mental tests. That will no doubt be accepted as the standard book on mental tests in the United States because it is the result of a longer period of study and more thorough research than any other book we have." We were very glad to find that a book from Minnesota was being used in Massachusetts.

Dr. Kuhlmann will now speak on "A State Census of Mental Defectives." Dr. Kuhlmann.

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A STATE CENSUS OF MENTAL DEFECTIVES

F. Kuhlmann, Director Research Bureau, Minnesota State Board of Control.

A. Nature of Census to be Discussed.

The kind of census that will be discussed in this paper is not the kind with which we are usually concerned when dealing with a census in other fields, or like the censuses of mental defectives of the past. Censuses of mental defectives of the past have been limited to mere enumeration, the determination of the number, have been local, excepting the several attempts made by the United States Government to get a census of mental defectives while taking the general census, and temporary, made once and then discontinued. Such a mere enumeration, local and temporary, would still have considerable value if it were made reasonably complete and accurate. It would give us some foundation for a rational program of providing for mental defectives. But all censuses made by the old methods, before adequate mental tests existed, have missed the mark so widely and resulted in such under-estimations of the existing numbers of mental defectives that today it is a very difficult task to get even a hearing for the real facts. From these enumerations and estimations the public has been led to believe that regarding one-half of one per cent of the general population as feebleminded is an extreme view, and that the truth would probably show a considerably lower figure. At this rate a state with Minnesota's population would have between twelve and fifteen thousand cases. And how many citizens in Minnesota believe that there are that many in the state, and are willing to back a program that would attempt to provide for them? We are very sadly deluded about the magnitude of our problem of providing for the feebleminded, and it will require a slow process of education for the public to see the light of the real situation. The best of proofs that we really have from five to ten times as many cases as the extreme of the usual census has indicated would have very little weight at present. The public must be furnished the facts in such a form that it can see for itself.

The kind of census that I wish to discuss is, first of all, a complete census of all cases among children of school age. The census is to be made complete by an actual examination of every school child, not by simply inquiring of school authorities and teachers how many they think are mentally defective. Secondly, the census is to be state-wide, not local, by sampling a few towns or districts. Such sampling if extensive enough and done with due regard to local differences might be sufficient to determine the existing number in the whole state, but would exclude the main uses which the census should have. Third, the census is to be continuative, kept up from year to year, not temporary, made once and then dropped. Fourth, the census is to furnish not merely numbers, but names and addresses. It shall locate every case found. Fifth, and this is really already applied in the foregoing, the list shall be duly legalized by having each case

passed on by the courts, as soon as it becomes necessary to decide whether or not he shall be given permanent state guardianship, and this shall be made a public record that will be placed in the hands of all officials charged with the enforcement of laws concerning feebleminded. In a word, the census shall be a complete, continuative, name and address census, legalized by the courts, and placed in the hands of officials.

B. Method of Getting the Census.

Having stated the problem, let me proceed to discuss methods. How shall the census be secured and maintained? In view of the fact that most cases of the higher grades of mental deficiency are not recognized as defective until after they have repeatedly failed to live up to home, school or social requirements, it becomes necessary to examine every person in order to find all that are defective. For many reasons, which need not be discussed here, this examination should be made at as early an age as possible. There is only one place that makes all persons available for such an examination. This is the schools. All children of school age are required by law to attend school, with certain excepting circumstances. The number that do not attend school and are not located because of the existing reason why they do not attend is, for our purposes, negligible. Here, then, we have a place where all come together and become available for examination. Not only do they become available, but the examinations required can be made here under the most favorable circumstances, with a minimum of time and costs, and without friction. A compulsory mental examination that called every child to an office for this purpose would at least in the present state of public attitude toward mental examinations result in considerable opposition, and could probably not be universally enforced. Mental examinations in the schools, however, are already in general use, with practically no protests arising. Moreover the census of mental defectives among school children could easily be made simply a by-product of a general program of determining the grade of intelligence of every school child, in which program this census would be entirely overshadowed by the vastly more important and valuable result given in the known intelligence of every child instead of merely of the defectives. A number of school men and psychologists have already predicted that the day is not far distant when this mental examination of all school children will be universally practiced. It calls for a ridiculously small effort in proportion to the uses to which the results can be put.

In these examinations the inquiry may be limited to one thing, namely, the determination of the grade of intelligence. A medical examination and a sociologic study should either precede or follow. But the medical interest is distinct and independent of the others, and nothing has ever been gained by confusing them. Every child should receive medical attention without reference to his grade of intelligence. The sociologic inquiry may be made after the mental examination reveals a mental deficiency, which will then become a part of special care and training and is thus likewise independent of the diagnosis and the census here in question. The determination of the grade of intelligence should be by means of mental tests. They are far superior to the older methods in accuracy and reliability, and incomparably

so in economy of time and costs. The development of group tests in the past few years has added a very valuable instrument for just such a task as we are now considering. With the group tests an examiner can take any number of children up to a hundred or more at a time and complete the examination of the group in an hour or less. Scoring the results for each child can then be done at the rate of ten to thirty cases an hour. This part is purely mechanical clerical work and can be done at a small cost. The results of group tests, however, are not reliable enough for each individual child to be acceptable as the sole basis for classifying him as to grade of intelligence. When he is one of a group the examiner cannot control his efforts as can be done in the individual examination. His score is more or less frequently low as much because he has not tried to do his best as because of lack of ability. Again, group testing must be through the medium of paper and pencil responses, and the younger children in the lower grades have not yet learned to express themselves entirely freely and easily in this way. Still other factors enter to lower the reliability of the group test score. The use, then, to which the group test can be put in getting our census of mental defectives is that of a preliminary survey. Those who do poorly on the group tests may be given a further individual mental examination. They are simply a means of finding all that should be given the individual examination. There is no other way of doing this as effectively. The next best method is the one in which the teachers and others make this preliminary survey, by reporting on the basis of their own observations on the children the cases they think may be mentally defective. But this method is a poor second. We have used both and compared the two a number of times, with the result of the discovery that teachers may fail to report more than half of the existing defectives, while on the other hand as many as half of those that are reported as possibly mentally defective may not be defective. A census in which such a preliminary survey is used will in no instance be complete, while at the same time it will involve much work in giving individual examinations to children considerably above the grade of mental deficiency.

The first step in our program, then, is that of giving group tests followed by individual examinations. The next question is that of the part of the school population to which they shall be given. I have in mind a machinery required to keep up the census from year to year. Obviously it will not be necessary to examine the whole school population every year. Most of those found mentally defective in the first examination will not need to be re-examined again at all. A child markedly mentally defective at any age hardly ever improves enough to become normal. A certain small number should be re-examined several times before they reach the age of fifteen before a final classification is made. I, therefore, would propose the following procedure as the essentials in our examination program. Give mental tests to all children of the first grade each year, omitting only those who repeat the grade and who will have had the tests the previous year. Select a certain number for individual re-examinations in following years. Locate the children past the age for the first grade but who have not entered school and determine their mental status separately. This plan needs to be supple-

mented further for a generation or so in order to locate all the mental defectives among the older school children and the adult population. But in time this would be eliminated and we would have from the beginning the permanent minimum essential machinery required for the census. In the meantime, we would be attacking the problem in the right place. We would find all our mental defectives that are still young and still capable of salvaging in various degrees. Also, it would doubtless be as much of a program as could be established and put through at the beginning.

Making the mental examination and determining the grade of intelligence of a child is, of course, only one step toward getting him legally on our record as mentally defective or feebleminded. I do not believe it necessary that the court should give a hearing for each case, involving a re-examination and independent determination of the mental status of the case. A much simpler, more effective, and surely less costly procedure could be devised that would protect the rights and interests of all concerned. It takes no court procedure to place a child in a special class for mental defectives, and we have had these special classes in every state for many years without any serious trouble or injustice arising out of the practice. In fact, it is certain that if these children all had to be passed on by the courts before being placed in such a special class, the good services the special class now gives would be very seriously handicapped. I realize, however, that finding a child feebleminded and making him subject to more rigorous forms of control is more serious than simply placing him in a special class in the schools. It is granted, therefore, that a court hearing of every case is necessary to establish a census of the feebleminded not because this method is better, but because the public would demand it. It is not necessary, however, to have that hearing as cumbersome, time consuming, expensive, and generally inefficient as it is now in most states. The usual examining board should be done away with entirely or else radically modified. Means should be devised whereby the members of such a board would in the first place owe their membership to real qualifications for the work. Secondly, the board should have some degree of permanence, instead of change with the hearing of every case. It is only by following these two principles at least that greater efficiency and some sense of responsibility on the part of the board can be secured. The board might well consist of the judge, a specialist sent by the state, and a third member from the local community appointed or elected for a term of years to sit on all hearings. Such a board would have several very important advantages over the examining board as now constituted in most states. First, it would be much better qualified for the work, because at least two of the three members would be selected on the basis of qualification. Second, because of its permanency its members would have an opportunity to gain still further knowledge and experience in the work. Third, it would develop a sense of responsibility, because everybody interested in the community and state would know who were responsible for the results of every hearing given. The Board might have regularly provided for it means of securing reliable psychological, educational, sociologic, and medical data on every case before a hearing is given. A hearing by such a board, so assisted, would furnish

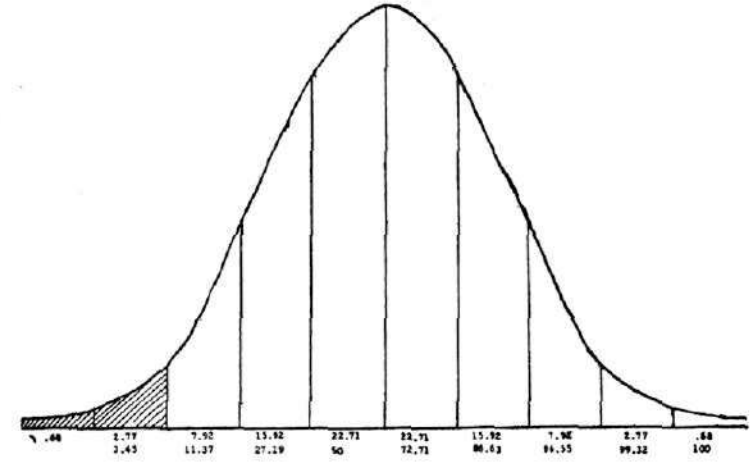
an interesting contrast with the usual court proceedings of nowadays in which the neighbors are called in to help decide whether a person is feebleminded or not. Besides greater efficiency, it would give greater economy. Members of the board could individually study the facts about each case before the hearing, and they could come together to pass on a number of cases at a time, instead of calling for a separate sitting for each case. Decisions could be reached ten times as fast as is now the rule.

These mental examinations and the court hearings following them sound like an ambitious undertaking. I anticipate that the critic will say that the thing is entirely impractical because of the amount of work and costs involved. Let us, therefore, consider this question a moment. First as to the time and expense in making the mental examinations. Let us assume a state like Minnesota, with a population of about three millions. One fifth, or 600,000, is school population. One fifth again of this school population or about 120,000 is in the first grade. Aside from the re-examinations and the examination of an occasional older case coming in from the outside, our plan limits the examinations to the children of the first grade. This means that the group tests would have to be given to 120,000 children a year. To find all the mental defectives among these a maximum of possibly eight per cent would have to be given individual examinations, or 9,600. Making a liberal allowance for re-examinations and others, might increase the number to about 11,000 examinations a year. One person, by doing nothing but giving individual examinations, could easily examine 1,200 cases a year, but it would be wearing and could not be kept up. About 600 a year would be a more practical program, letting the examiner devote the remaining time to work related to the examining. At 600 a year per examiner, eighteen examiners would be required. Salaries and expenses might call for $4,000.00 per examiner at the most. The maximum cost of all the examinations in a state a little larger than Minnesota would then be $72,000.00 a year. This is the maximum that it would cost without wasting money and does not consider the fact that the eighteen examiners would be devoting about half their time to other work. Probably the actual figure would not be much, if any, over $50,000.00 a year.

The costs of the court hearings is more difficult to estimate. This would depend so much on how it was done, as already discussed, and on how many cases were passed on a year. The latter again would be determined by the effectiveness of the whole state program of training, care and control of mental defectives and feebleminded. A very large number of the mentally defective, if properly managed from an early age up, should never need permanent state guardianship and, therefore, would not call for a court hearing to pass on this question. I believe it would be a very liberal estimate to allow $100,000.00 a year as the total costs for the examinations and court hearings combined. This is less than the cost of a new building that will house about a hundred cases, and the building is the "initial expense," not the "upkeep," in the expense of caring for these hundred cases. But most of all, as it is at present, the main expense, probably several times this figure, has already been paid before these hundred cases get into this building—the expense of neglect.

C. Some Results of Surveys.

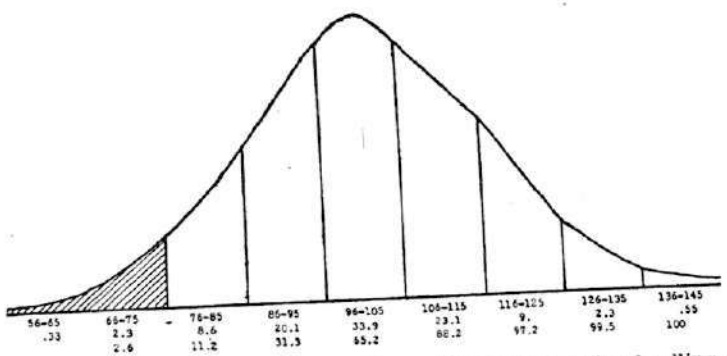
I have intimated that the real number of existing mental defectives is probably many times what has been supposed before mental tests came into use. Let us next ask what mental tests have shown so far to justify so radical a change in view. In discussing this question it must be granted that *mental tests are the best measures of intelligence, and that mental* deficiency is solely a matter of lack of intelligence. We are not concerned now with the biologic, medical, or sociologic traits that may be associated with mental deficiency. The percentage found defective depends, of course, in the first place, on where we draw the line between defective and normal. But what needs to be understood clearly further is the fact that this percentage increases quite out of proportion to any increase in intelligence that is added to the defective class by moving up the line between the two. Everything we have so far learned about the percentages of persons that belong to each successive grade of intelligence from the lowest to the highest points to the conclusion that the same law of "normal distribution" holds here as it does in so many other instances. If that is so, and if also we have decided where to draw the line between normal and defective, we will know what percentage of the general population is mentally defective without making a single actual examination. Let me therefore first explain this "normal distribution." Let us assume that we have 10,000 adult men selected at random. *Classify them according to height, which we will* assume ranges from 30 inches to 90 inches. Establish first a line of men from east to west and facing south beginning with one 30 inches tall, *the next 31 inches, the next 32 inches,* etc., to the end of the line where the last man will be 90 inches tall. Then take all that remain of the 10,000 and arrange them behind this line according to height, having all those 30 inches tall, e. g., behind the one 30 inches, so that they form a row running north and south. Do the same with those 32 inches tall, and so on. This gives a series of rows of men each starting from the base line and running northward. These rows will be short for the short and tall men and longest for men of average height. Now connect the north ends of these rows with a line. This line will be what is called the "normal distribution curve." In this we will know what percentage of the men are 30 inches, 31 inches, etc., tall, without actually measuring a single man. Let us apply this to grades of intelligence, as shown in the graph on next page. The base-line of the graph represents increasing grades of intelligence from left to right, instead of increasing heights. *The lengths of the vertical lines show the relative number* belonging to each grade of intelligence. The first row of figures below the baseline gives the percentages belonging to each grade. The second row of *figures gives the total percentage for all grades below the points indicated.* The shaded area gives approximately the proportion of the total population that may have to be classed as feebleminded. What I wish you to note first here is the fact that, going from left to right, the percentages increase very much more rapidly than does the grade intelligence. Equal increments in intelligence give much more than equal increments in percentages, up to the middle or average grade of intelligence, beyond which the reverse of course takes place. Therefore, drawing the line between the mental defec-



tives and normal a little bit higher will increase the percentage of mental defectives quite out of proportion. This is one important reason why our mental tests have revealed so many more mental defectives than the older methods, even though the line is not drawn any higher with the mental tests. The older method finds a few of the higher grades, but misses most of them. The mental tests find low and high grades equally well.

With these theoretical deductions we may now compare the results of a few actual examinations. This must be limited to school children, as large numbers of the general population have never been examined carefully to determine the percentages that belong to the different grades of intelligence. In 1915 Terman reported the results of the individual mental examination of 905 non-selected public school children of California. They were *of all ages as found in the first to eighth* grade, inclusive. The grades of intelligence were given in terms of intelligence quotients. In the graph below these intelligence quotients as found range from 56 to 145. Remembering that the I. Q. of the *average person is 100 and that it goes down to* zero or practically so, we should theoretically expect a range of I. Q.'s from 0 to 200. Children with I. Q.'s from 0 to 50 rarely get into the public schools, which doubtless explains part of Terman's result. Why he should not have found any with an I. Q. above 145 is not clear.

In the graph the first row of figures under the base-line gives the I. Q.'s in ten point steps, *dividing the whole range from 56 to 145 into nine grades* of intelligence. The second row of figures under these gives the percentages of children belonging to each grade. The third row gives the total percentages belonging to all grades below the points indicated. Note here first the striking resemblance between this distribution curve on grades of intelligence as found by actual examination, and the "normal distribution" curve above. Terman's results show a little over two per cent of his California public school children as definitely feebleminded. 2.63 per cent have



an I. Q. of less than 76. I have myself been following the rule of calling any mentally defective person feebleminded if his I. Q. falls below 75. Terman draws the line at 70. Nearly all others have drawn the line either at 70 or 75 when the I. Q. was made the basis for classification.

Since Terman's report in 1915, a number of similar studies have been made, but in which only enough of the school children were given mental tests to determine the percentage that was feebleminded. The public schools of X County, California, were surveyed by mental tests in 1918. Here the teachers first estimated the intelligence of the children on the basis of their own observations. The lowest 20 per cent in the teachers' estimation were then given individual mental tests. The one city in the county showed 3.5 per cent below 70 in I. Q. In the rural schools 4.9 per cent had an I. Q. below 70, giving an average of 4.24 per cent for the county as a whole.

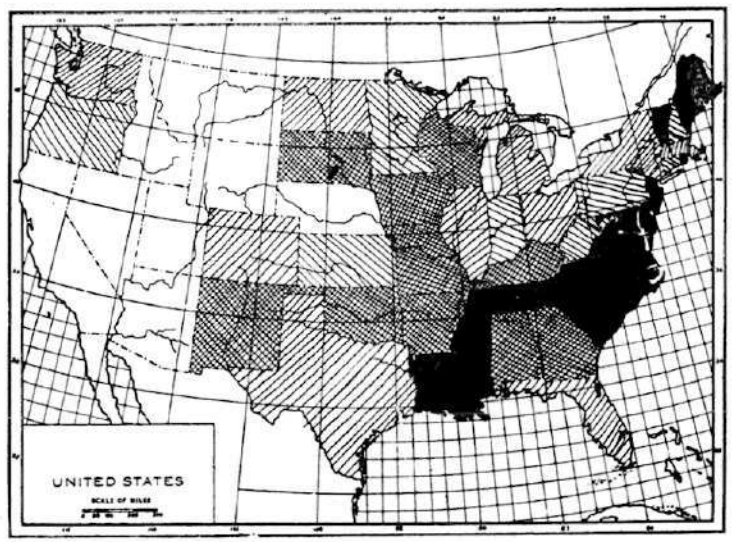
The public school children of X County, Indiana, were surveyed in 1918 by group tests. This group testing was followed by individual mental test examinations of the children who did poorest in the group tests. The county seat, Bloomington, showed 2 per cent of the children to have an I. Q. below 70. For all the others the average percentage was 6.4 per cent.

In Minnesota we have ourselves surveyed the public schools of a number of towns, and the rural schools of one county. In each case all the children were group tested first, followed by individual mental examinations of those who did poorest in the group test. The following table gives the percentages with an I. Q. below 75.

Towns	School population	No. of F. M.	Per Cent of F. M.
I	163	13	8.
II	593	40	6.7
III	832	46	5.5
IV	1,025	38	3.7
V	1,220	67	5.5
VI	587	26	4.4
VII	588	26	4.4
VIII	966	23	2.4
	5,974	279	4.7 average

These differences in the percentages of school children found feebleminded in the different towns and counties surveyed with mental tests are still due in part to differences in the details of the method and procedure. But evidently the locality differences are very large, as is seen in comparing the results from the towns and county surveyed in Minnesota, where the method was the same throughout. Such local differences have in fact been found in a great many instances in the past few years. Certain factors suggest themselves as the causes. Predominence of a certain nationality may be one. Predominence of a certain occupation is surely one. The accidental presence or absence of a few families or lines of descent in which mental deficiency is very frequent is probably a third factor. Land values, general desirability of the locality, are still further factors. In practically any town more mental defectives will be found in the sections of the town where real estate and rents are cheap than in the better residential sections. The mentally defective do not acquire the means of living in the best part of towns, nor appreciate the difference. The army test results have shown some illuminating relations between mental deficiency and locality, and between intelligence and occupation.

Davenport and Love (Scientific Monthly, February, 1920) report the percentage of the drafted men that were rejected because of mental deficiency in the different states. They divide the states into four groups, according to the percentage of the draft that was rejected for mental deficiency as follows: (1) .2 to .8 per cent rejected. (2) .8 to 1.2 per cent rejected. (3) 1.2 to 1.6 per cent rejected. (4) 1.6 to 3.0 per cent rejected. The distribution of the states in each group is seen in the map. The black indicates the highest percentage rejected, the unshaded the lowest percentage, with the intermediate states shaded light and dark according to rejections.



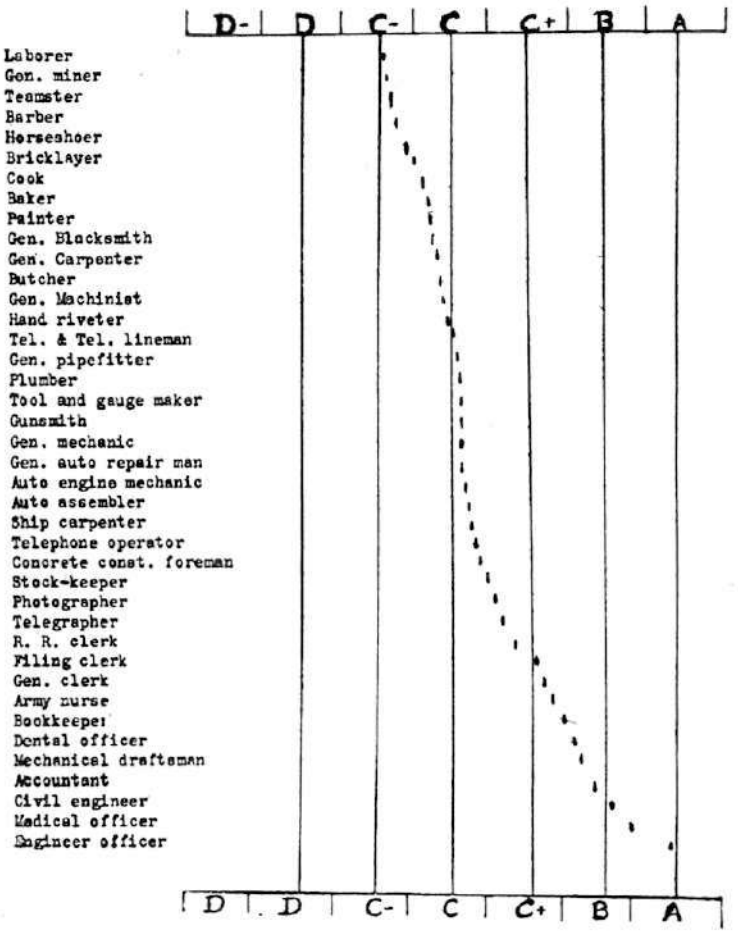
Undoubtedly different examiners varied widely in the thoroughness of examinations, and all were obliged to work hurriedly. But it is hardly likely that the states would arrange themselves as they do here largely because of difference in the examiners. The arrangement itself to the contrary strongly suggests other causes. The southern states, with their negro population, the eastern states with their late and poorer classes of immigrants in their industrial centers, the older states of northern New England poor in agriculture and other progressive industries, are the states with the highest percentages of rejection. The newer states of the west have the fewest rejections. The difference shown here is very large. It will be noted that the poorest states have rejected roughly four times as many as have the best. If this is a correct indication of the relative frequency of mental deficiency in the different states then some states have quite a different situation to meet from what is true of other. A state program for the care and control of mental defectives quite adequate for some states would not do at all for others. Furthermore, if such large differences exist from state to state, it is certain that differences several times as large as this will exist for smaller localities, say from county to county, or better yet, from town to town.

The relationship between intelligence and occupation is more easily understood. A given occupation requires a certain grade of intelligence for success. On the whole every man finds his level in the end, so that in general those engaged in a given occupation will be characterized by a grade of intelligence that the occupation requires. Of course, there are many exceptions to this rule. Very intelligent people are found among unskilled laborers, and some fools get into the professions. But the average intelligence of people in each given occupation proves the rule. This is shown in a marked degree in the results of the army tests given in the table on next page. The letters A to D— indicate the grades of intelligence as determined by the army test. The short vertical lines opposite the occupations listed on the left show the average intelligence of the men in each occupation. The C grade is the average intelligence of men of all occupations taken together. It will be noted that the average intelligence of the different occupations ranges from A to C—.

These results indicate that occupation may be a large factor in determining the general level of intelligence of people in a given locality which itself furnishes a given occupation in a predominant degree. And where the average intelligence is low the frequency of actual mental deficiency will also surely be high.

D. Uses of the Census.

We come now to our final question. Of what use would a census such as has been described here be? Especially, how would it fit in with existing laws and conditions as they are in Minnesota at present. I shall put first as its most important use its educational influence on the public. Progress will be made in the care and control of mental defectives only as fast as the public demands, and public demands will grow only as fast as its knowledge of the facts increases. Mere statements, claims and propa-



ganda will not do the work. These at best can create only a temporary blind impulse, likely to be undone by later reflection. The will that always finds a way must wait on the light that creates the will. In recent years the public has demanded good roads, and we are getting good roads at a rapid rate. Good roads have been demanded because there has been a clear knowledge of the advantages and economies of good roads, of the possibilities of getting good roads, and of the ever-present reminder of daily first-hand observation that we did not have good roads. But how many of us have a similar understanding about mental defectives? We have them in our schools at considerable expense and much detriment to the general efficiency of the schools without knowing it. We employ them in our shops, factories, farms and homes and accept their shortcomings and

failures as necessary evils. They commit a crime punishable by law in Minnesota every hour of the day, and we are sending more than one every day to penal institutions from which they return, we can be assured, unreformed, without our knowing that mental deficiency is the cause. Minneapolis and St. Paul are just now cheerfully giving two millions for charity, to be repeated yearly with necessary increases, without knowing that about half of this will go to mental defectives that cannot really be helped in this way. We know that all these things and a great many more happen, and there is no need of enumerating them here. But we know it only in the abstract. We do not connect it up with concrete individuals. Now suppose that we introduce into this situation a name and address census of all our mental defectives. Let every town, village and community in the state have an opportunity to watch its mental defectives grow up from early childhood to maturity; observe the parents and homes from which they come; see them attempt to struggle through the schools and fail; see them later as matured men and women still dependent on their relatives for a living; note their frequent delinquencies, their illegitimate children, and watch them marry and produce large families who in turn will repeat the cycle of events. If this were done, would our legislatures still spend fifty millions on good roads because the people demand it, and apologize to them for allowing one million for mental defectives? We may venture the opinion that they would omit the latter and possibly even reverse the relationship in expenditures on these two items, because an enlightened public will would be aroused to action.

A community informed would, however, do more than demand better provisions and more expenditure for mental defectives. With an existing census, many things could be done, especially in Minnesota, with little or no more direct expenditure, and with much indirect saving as a result. Almost a negligible number now get special training adapted to their needs. About half of those that now do get special training in the special classes of the public schools and in the state institution begin that training at an age when the larger and most important part of their training period is past. A census would make possible special training for all and at the right time, without a great increase in direct expenditure. The absence of a census and of the wishes of each community now alone prevent this in Minnesota. A Minnesota law forbids the marriage of a feebleminded person, but hardly ever prevents one. Wth a census, not a dollar more than is now spent would be needed to prevent this marriage in every case. Minnesota also provides for the compulsory commitment to its institution for feebleminded of a feebleminded person, when such a person cannot safely or to the best advantage be cared for outside. But it repeatedly fails to enforce that law because an uninformed community does not demand it. We are now repeatedly failing to commit as feebleminded unmarried mothers with one or a number of illegitimate children, and sometimes with social records in other respects hopelessly bad, where mental ages are as low as seven or eight years. That failure is due to lack of knowledge on the part of the court and examining board, and sometimes to lack of courage because the community might object.

We have in Minnesota most of the machinery required for giving adequate training, care and control to all our mental defectives. No other state has a more comprehensive or better planned general program, however lacking it may be in important details at many points. None has provided as well for special training of defectives in the public schools. None exceeds it in material equipment of its state institution for feebleminded, considering the matter relative to population. It does as well as others in its anti-marriage, compulsory commitment, and other laws, though shamefully lacking its accomplishments may be. In its plans for extra-institutional care and control of feebleminded, though not in achievements in this line, it far excels any other state. In common with every other state it has neglected to take any serious step toward first finding out for whom this legislation, provision and expenditures are to be. It has persistently overlooked the most obvious requirement; namely, that you must first know who is to receive the benefits of special training, care, and guardianship before they can receive it. We have been living in the delusion that no special efforts are necessary to recognize and find the mentally defective; that they will automatically announce themselves without further attention on our part. In a measure and in a way this is indeed just what they do. They announce themselves by damages they do to society. We cannot fail to see the damages. Sometimes we recognize the cause as mental deficiency; but usually we fail in the diagnosis.

This brings one to the final observation on the uses the census might have. It makes possible prevention, instead of merely an attempt to repair after the damage is done. If we locate a mental defective in early childhood we can watch his conduct and help him from the beginning. No mentally defective is by nature more vicious or inclined to delinquency than his normal brother. All can be made well-behaved if surrounded by a faultless environment and correct training. Extra-institution guardianship would be entirely adequate for all of moron grade if properly brought up. Many of the best of this grade could be saved entirely from any direct state control. In a word, following our state definition of feeblemindedness, we could prevent the great majority of our mental defectives from becoming feebleminded.

R. W. Wheelock, State Board of Control: I want to say, in appreciation of Dr. Kuhlmann's paper, that his remarkably scholarly, exhaustive, scientific presentation of this subject has laid the foundation for the solution of the biggest problem which faces this state and the Board of Control.

The Chairman: I want to endorse what Mr. Wheelock has said. Dr. Kuhlmann's scholarly, interesting and exhaustive treatment of this subject has been very splendid. I have followed every bit of it with the greatest interest and I know you all did. I am sure we all want to thank him for this able presentation of his subject. It has been so complete I do not know whether there is anyone in the audience who cares to discuss the subject. I think the Doctor in Massachusetts knew what she was talking about.

Joseph E. Vance, School for the Blind: I should like to add my little word to what has been said. I appreciate this paper very much and wish to thank the author personally. I have long been interested in mental tests,

and while working with the disabled soldiers on many occasions we referred to this army-rating table shown here this afternoon. The result of the tests given the soldiers when they enlisted, when tabulated, proved to be a definite and valuable guide in advising men as to vocational training. When a man was surveyed vocationally, the record was made on his history sheet, which gave his standing from the mental test made when he originally entered the service. That chart is very familiar to me. I have had men ask to take a course in civil engineering or some equally difficult course when the test sheet showed a rating of D or even D-. Those ratings were splendid guides and kept us going in the right direction in many cases.

You may be interested to know that there has been a set of tests recently made for the use of the blind. It is an adaptation of the Terman-Binet scale for use with the blind by Prof. Samuel P. Hayes, of Mt. Holyoke College, and by Robert B. Irwin, formerly supervisor of public school classes for the blind of Cleveland, now in the research department of the American Foundation for the Blind.

Florence Monahan, State Reformatory for Women: How much value do you think the intelligence tests have when applied to adults; say a person thirty years of age?

Dr. Kuhlmann: The value would be slightly reduced because the tests are not absolutely free from the effect of experience and training. If I were to make an offhand guess I should say that possibly the I. Q. for an adult might be off five to seven points. The fact that he is an adult would bring it up rather than down.

Mrs. C. L. Atwood, Board of Women Visitors: At what age does anyone have an I. Q. of 75?

Dr. Kuhlmann: Any child of any age may have an I. Q. of 75. Whenever the mental age is three-fourths of his real age then he has an I. Q. of 75.

Chas. E. Vasaly, State Reformatory: Isn't it pretty difficult, Doctor, to get an accurate or adequate I. Q. in the case of the deaf or the blind or certain classes of illiterates? Take Spanish or Mexican boys who can not write either Spanish or English. Unless the examiner is particularly adapted I do not see how an ordinary examination would get him anywhere. How do you expect to overcome that sort of thing?

Dr. Kuhlmann: Tests have been developed that apply to the blind, and so far as I see they are undoubtedly as accurate and reliable as the Binet test was in the beginning. I think they are as reliable as our Binet tests for normal seeing people were at first. Not quite so much can be said for the deaf, but we have tests for the deaf also. About the same sort of tests would apply for the illiterates as for the deaf.

In the army tests, as you all know, there was included a series of tests for the illiterates. Army tests were of two kinds; the first applied to those who could understand the language and do the pencil work; in the other the performance test, the language did not have to be understood and in some no pencil work was involved. True, there is room for a great deal of improvement in these tests for the blind, for the deaf, for the illiterates, for-

eigners, et cetera. We have tests for each class now that are a big improvement over our older procedure of trying to find out hit-or-miss what the intelligence might be.

Mr. Vasaly: I do not feel quite so much of an alarmist as I used to feel about the delinquent feebleminded. I believe there are methods of training and care which, after all, except in a few cases, do not make them quite so serious a problem when they leave institutions as we once believed. I find the feebleminded in my institution pretty fair people; mostly not vicious or evil, and I think, under favorable circumstances, most of those I have would do well. I venture to say that the great majority of them are going to do very well in the community. I have observed also that we have much more trouble on parole with bright offenders than we do with the feebleminded ones. There are two or three hopeless feebleminded boys--we brought one back lately--who are strictly custodial cases and should be kept in an institution, but as a rule those who have come to institutions during the last few years are remedial cases. If they get any attention and sympathy in the community they are going to take care of themselves, I am sure. For that reason I have not felt it is quite so bad a proposition.

Dr. Healy not very long ago made the statement that a considerable proportion of those who many years ago would have been considered institutional cases can now be cared for on the outside.

It seems to me there is a little sunshine in the matter in spite of the gloomy forecast of this morning. If that forecast were true, one of the best possible forms of government for the United States would be that of a benevolent despotism.

Mrs. J. L. Washburn, Board of Women Visitors: Do we want the feebleminded to propagate, have large families of children, and bring down the general average?

Mr. Vasaly: That of course is another question. If you are hinting at sterilization, I am opposed to it and always will be. I do not think they should marry; certainly not; but, on the other hand, I do not believe a person in an advanced stage of tuberculosis ought to marry. I can imagine cases of heart strain where the man is a nuisance in his family, which makes boys go out on the street and commit crime.

How many million feebleminded are there in the United States? Twenty-five million, it is estimated, of our esteemed fellow citizens who are helping us to elect senators, et cetera. I have sometimes thought they were feebleminded especially when I read the returns on election night. If it is so, it is a mighty serious thing, and we ought to find out about it as soon as possible; and yet these millions and millions of our fellow citizens have been taking care of their farms and doing rough work, the so-called nasty work as I understood someone to say this morning. It is the first time I ever heard honest labor was nasty. They have been going to the poles and paying their taxes, and were, many of them, capable and willing to die on the battlefield for their country. There was a time when dying in that way was considered a pretty fine evidence of good citizenship.

J. T. Fulton, State Training School: Personally, I do not accept at full value the rather extreme statements frequently made relative to the effect of feeblemindedness upon society in general. I presume that the race has been afflicted with feeblemindedness in a greater or less degree for many thousands of years—yet in some wonderful way the race has been preserved. The problem should be vigorously attacked. Of that there is no doubt, but I am fully convinced that many writers and speakers today are enamored of the prospect presented by a world rapidly drifting into absolute feebleness of mind. The prospect offers an exceedingly congenial field to the person gifted with a vivid imagination.

Mrs. Washburn: How are we going to take care of these delinquents, insane, feebleminded, et cetera, who are increasing much more rapidly than are the normal people? In time there won't be enough normal people left to take care of and build institutions for them. If it is not to be sterilization, it must be institutional care for every subnormal person.

If there is anything that we can do in the way of propaganda and education so that people may know and face the situation, let us do it by all means. When people as a whole understand and appreciate the problem which we are facing, judges will no longer fear to do the thing that is best because of public opinion.

Mr. Vasaly: Do you think it is a community problem?

Dr. Kuhlmann: I think it is and ought to be essentially a community problem instead of a state problem.

Mrs. Atwood: Just what are you going to do with the list of feebleminded?

Dr. Kuhlmann: I intended to antipicate that question and answer it before it was asked.

Do we want to make the list public? In a sense, no; and in a sense, yes. It is not necessary for every man on the street to have a list in his pocket. On the other hand I see no harm that can result if all the people who are concerned, all the officials, have a list in their pockets. I think I might enlarge on that. I do not quite agree with the idea that we must hide our knowledge of mental deficiency somewhere so it won't be seen. I am not quite sure that that kind of policy in the long run is going to give the best results and do the most good.

I feel that we really won't solve our mental-deficiency problem until the average man in the community can look upon mental deficiency not as a disgrace but as a misfortune, the same way as he now looks upon tuberculosis or typhoid fever. Possibly that is a state of mind that we can not get into, but I do not think we will solve all our problems about the feebleminded until we do. If we can get into that state of mind; if we can view the mental defectives as unfortunate and realize that they should be helped, deservedly helped, have all that we can give them; then I think we are on the road toward solving the community problem.

I do not know to whom I would give the list, but I can not see any harm resulting if all the officials of the law who are concerned with mental defectives have it. If that much were done and legitimate use was made of such a census, then we would be miles ahead of where we are.

We are changing our attitude toward the insane and it might be possible to change it toward the feebleminded.

Mrs. M. J. Jones, Superintendent Emergency Home, Women's Welfare League, Minneapolis: Dr. Louis A. Lurie, of Cincinnati, in his address at the Minnesota State Conference in Duluth in September stated that 12 per cent of feeblemindedness was caused from defective eyesight.

In our Home, where we have 25 or 30 girls a month, we always have 5 or 6 feebleminded. Naturally we have become interested.

One in particular we have watched carefully. When she was brought to us she was very bad-tempered, shouted at the top of her voice, was very nervous and could not be made to take an interest in anything, had violent headaches, and other physical troubles. Finally we took her to an oculist who pronounced her eyes in very bad condition. After she got her glasses there was a marked improvement in every way. She now sews enthusiastically, her voice and temper are almost normal, and she wants to take music lessons this winter and has promised to take a primary-school course. Also, she has a savings bank account. In the spring, when we think she is physically fit, we hope she may have another mental test.

Dr. Kuhlmann: I do not think it is usually held that mental deficiency is in any degree due to blindness or any other deficiency of the senses. I am rather inclined to believe that in the case you have in mind the mental deficiency was apparent and not real. Mental deficiency is not usually due to disease. It is usually a matter of inheritance, but with this inheritance disease may be associated.

For a long time it was supposed that nose and throat troubles, bad tonsils and adenoids, were important causes of the mental deficiency. They are the things that go with a mental deficiency but they are not the cause of it. We have had quite a series of suppositions of this sort. We seized upon one thing after the other as the cause was due to the skull not allowing with the idea that the microcephalic case the brain to grow. Now we have found that by taking out tonsils the child improves physically but very little or not at all mentally.

The latest fad in this line seems to be endocrinism. The ductless glands are supposed to be responsible for mental deficiency. Three years ago some physician in Boston studied the anatomy of these ductless glands in 100 cases of feeblemindedness, and found that in three-fourths of the cases they had defective ductless glands. Since then there has been a strong pull toward the idea that feeblemindedness is probably in a very large measure due to deficiency in one or the other of the ductless glands.

I am not a medical authority, but I am allowed to guess, and I suspect that we will find that these things, like many others, are only associated with mental deficiency more generally than with the normal, and are not the cause. We can patch up physical defects and we still have the original cause of deficiency left.

Mr. Vasaly: Under your plan are there going to be examiners enough? Are there enough competent examiners in Minnesota at the present time? I recall your saying over five years ago that there were not half a dozen competent examiners in the state.

Dr. Kuhlmann: Pretty nearly. I then had reference to doing it with the older methods. I am sure it would not be more than four years before the University of Minnesota would produce the people if the demand existed.

The Chairman: It seems to me that we have had on our program today two extremes in philosophy; the one from the philosophy of despair of Stoddard, quoted by Mrs. Washburn, and one that of the morning when they quoted Coue, about getting better and better day by day in every way. I think we have been given a middle course today that is very practical and very promising and very helpful. It seems to me that the putting into actual practice of such a program as Dr. Kuhlmann has outlined, taking into consideration the work that is being carried on by such a clinic as Dr. Lowrey represents, to take the mentally defective children and surround them with such supervision in their youth—that is, when they are quite young—and follow that up for a period of years, perhaps we are going to arrive at a better solution of this problem than we have been able to hope for from some of our speakers. Personally I want to feel that there is hope, because if there isn't we are looking forward to a future that is a trend back toward the dark ages. I do not believe there is anybody in this audience who believes that. I think we have had a very helpful and successful conference today.

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