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Gillette State Hospital for Crippled Children.....	St. Paul
Elizabeth McGregor, Superintendent	

QUARTERLY CONFERENCE

of the STATE BOARD OF CONTROL

with the

EXECUTIVE OFFICERS OF STATE INSTITUTIONS

at the

STATE OFFICE BUILDING

St. Paul, Minn.

September 10, 1935

"Outstanding Accomplishments at State Institutions During Past Year"—  
Superintendents of state institutions.

"Institution Herds"—J. B. Fitch, Chief of Dairy Husbandry, University of  
Minnesota.

"Intelligence Tests"—F. Kuhlmann, Director, Research Division, State Board  
of Control.

MORNING

Present: Members of the Board—L. G. Foley, Chairman, C. R. Carlgren,  
Blanche L. La Du. Superintendents—Yanz, Lee, W. L. Patterson, Smith, Freeman,  
Murdoch, McBroom, Lysen, Elstad, Vevle, Hegstrom, Inez B. Patterson, Jamieson,  
Burns, McGregor.

Meeting called to order at 10:45 by L. G. Foley, Chairman, State Board of  
Control.

Reports by Superintendents.  
Adjourned for luncheon,

AFTERNOON

Conference reconvened at two o'clock, L. G. Foley in the chair.

J. B. Fitch gave a talk on "Institution Herds."

F. Kuhlmann read a paper entitled "Intelligence Tests."

Adjourned.

L. G. Foley, Chairman, State Board of Control: The meeting will please  
come to order.

The first half of our program today is rather unusual. It appeared to the com-  
mittee and to the Board that it would be interesting at this morning's session to  
have each of the superintendents tell us what he considers the outstanding thing  
which has been accomplished at his institution during the past year. I am sure  
every one of us has been looking forward to finding out what the other fellow is  
doing and hopes to profit by what he hears. Inasmuch as all the superintendents  
are to speak, the time allotted to each must necessarily be limited to five or six  
minutes.

As Doctor Freeman has the oldest institution, I will call upon him first. Doctor Freeman, may we hear from you?

**Geo. H. Freeman**, Superintendent, St. Peter State Hospital: I am rather at a loss to know what to say because my understanding was that we were to give an account of something significant, and I think the most significant thing is that we have been able to keep going during the past year rather than anything else.

There are three things of interest at St. Peter; at least they are of interest to us.

The first thing that we feel is of marked interest is the question of restraint, how much restraint is necessary in the hospital receiving patients from the outside. I checked our restraint record and found that our daily average of males in restraint was three out of an average population of 900. The average number of females in restraint is  $11 \frac{1}{3}$ , with a population of 819. Now, this does not mean that we have fourteen or fifteen patients in restraint continuously, but it means that if anybody is in restraint for one hour or two hours or six hours, he is listed as a restraint case that day. With an adequate amount of nursing assistance the restraint among the women could be cut fifty per cent. Two of the cases that are listed as being in restraint are actively suicidal. We have at times but one night nurse on the ward; we do not dare to leave the two women alone a moment; so we put them in restraint at night so they will not kill themselves. The others are possibly in restraint for being destructive, violent or excited. Very often a case which has been in restraint but two or three hours will be listed as a restraint case.

The second interesting thing is a medical question. It is the aftermath of our treatment with malaria. We have the improved and the unimproved case left. The markedly improved cases have gone out possibly at the rate of thirty per cent a year, or a little bit less than that, but we find from time to time that these improved cases develop an unexplainable fever, possibly rather temporary. Occasionally they will have a chill. By detailed and persistent laboratory investigation we have found that vast numbers of them are carrying the malarial parasite in their blood without showing any symptoms and over extended periods of time. My attention was first directed to their being host to the malarial parasite by an ex-soldier who developed what is known as Korsakoff's syndrome, which, is generally believed to be due to alcohol, but other causes are listed. His application for a pension allowance was disallowed on the ground that his disorder was of an alcoholic nature. We were able to demonstrate that he was carrying the malarial parasite in his blood—he had been down South—and as a result of that the old record of his being alcoholic was set aside. It was conceded that chronic infection, such as malarial infection, might produce the psychosis.

The third thing of interest is the changing over of the entire institution to the use of natural gas. We have changed over the main kitchen and our smaller kitchens with extremely satisfactory results. We had but one old bake oven that we were running with coal. After we made this change we found that the cost of the gas used in cooking for the entire main institution was less than the cost of the coal for this one particular oven. We now have the material ready but have not yet installed the natural gas under our bake ovens and at the Asylum for the Dangerous Insane.

The use of natural gas under the boilers was at first extremely pleasing, but then trouble developed and our troubles are still with us. We began to burn out tubes as soon as we began to force our boilers beyond a rate of 450 h. p. Just how things are going to turn out I am not certain. The gas company's engineers claim that the presence of an extremely thin, insoluble phosphate scale is the cause of the burning out. The scale is about as thick as two sheets of paper. We are beginning this week to remove all scale whatsoever from the water. I suspect that we will

continue to burn out tubes because I think my theory is the correct one, and that is that we are using high-pressure burners, and when we force our boilers we are getting such a volume of gas that we are getting an actual burning of the iron, because our tubes do not swell, they do not belly, they are just eaten here and there. Usually the place where they are eaten is one particular point on the tube.

Mr. Foley: Thank you, Doctor Freeman. Your remarks were very interesting.

Now we will hear from Doctor Patterson.

W. L. Patterson, M. D., Superintendent, Fergus Falls State Hospital: There are just a couple of things that I want to mention which are of interest to us and they may be of some interest to the hospitals and asylums for the insane.

The first thing is the matter of the nurses' training school. For a number of years it has been considerable of a problem to keep up with the standards which the State Board of Nurses is setting up in this state, and so we have been faced with the problem of dropping the training school altogether or raising its standards to a point where they will meet their cooperation and their approval. There has been some question as to whether or not state hospitals ought to maintain a training school, or whether they should employ one group of nurses who are registered nurses and another group who act as maids and who do the drudgery and who receive no particular training and no particular education. To increase the number of registered nurses to a point where they can carry on the work adequately would prove a pretty expensive procedure. In hospitals serving a hundred beds or less I believe they can get along without a training school and probably would not lose any money at the present time by employing graduate nurses entirely, but I do not think that applies to a large institution with 850 women where you have to have a good proportion of nurses. As a matter of fact the proportion of nurses to the number of patients at our institution is entirely too low to meet our requirements. It makes it very difficult to reduce the amount of restraint because we haven't the proper number of nurses, and after all it depends on that primarily. Still, although both packs and continuous baths are naturally of tremendous assistance, I have never been able to see much difference between the pack as it is given and ordinary restraint. If the pack isn't restraint I do not know what you would call it. It certainly confines the individual in such a way that he is not free. So, this question of a training school has been a matter that we have had to deal with. The right thing to do it seems to me, is to increase the standards of the training school. That means that you would have to engage an educational instructor and also an assistant instructor to carry out the theory as taught, by Mrs. Amos, who is the educational director. In addition there should be more adequate teaching in the nurses' training school.

We also raised the standard of the school. We take nobody who has not been graduated from high school in the upper half of the class. They must also pass the I. Q. test given by the Research Bureau. We ask an intelligence quotient of 104 before we admit a girl. I am well aware of the fact that an intelligence quotient of 104 does not mean that a girl is going to make a good nurse, but it gives one some idea as to whether or not she is going to be able to absorb the training she gets and whether she will acquire sufficient theory to be able to pass the examinations after she does graduate.

The question of what to do about the attendants is also in our minds and has been for some time. We take absolutely untrained and green men and put them on the wards to take care of patients. They may have worked on the farm or may have done any kind of labor and know nothing about the nature of the mental troubles from which the patients are suffering. We give them hardly any knowledge of how to take care of a patient, how to dress simple wounda or how to give them

antiseptic care, or how to do the numerous things that have to be done around the patients. We never know what to do about it, so the educational director is endeavoring to give them a brief course in mental hygiene, in mental trouble, and also trying to teach them a little in the way of bandaging, antiseptics, and the way to care for small wounds on patients around the ward. How far we will get with that, I do not know. At least we are trying to increase their knowledge to a considerable extent.

Another thing is the question of adequate physical exercise and amusements for those patients who are confined in the institution for a long period of time. At one time we let them sit on the wards or go to the occupational shop, but that is not sufficient. You really have got to have a rounded-out program of work, amusement and physical exercise if you are going to do the right thing by them. Leaving out of consideration the question as to whether or not amusements are beneficial, I do think that at least it makes them happier, makes them more contented, and they get a little more enjoyment out of life.

We had a physical director last year, a young woman apparently very well equipped for the work, very satisfactory, very much interested in her work. She did a great many things we were not able to do before. Unfortunately she left us the first of August to go to college, and we have not up to the present time been able to secure a successor. As a matter of fact, it is rather difficult to get the right kind of a person to carry out a physical program among patients. They can do it among normal people, but it is a hard job among patients. They do not cooperate, they show a lack of interest and a lack of enthusiasm. A person has got to work hard if she expects to get anywhere with them.

In addition to that we have increased the number of outside amusements which we have in the hospital. We are taking advantage of the Extension Course of the University of Minnesota. We have five different courses, several of which are elective. The performance which the occupational department and the physical directors put on, together with at least *one* outside performance, gives us a fairly adequate amount of amusement for the patients. It could be greater if we had the money and if we had the people to do it.

During the past year we have tried to improve these two things particularly, physical exercise and amusements.

Mr. Foley: Thank you, Doctor Patterson.

Doctor Smith, may we hear what you have to say with regard to your institution?

**B. F. Smith, M. D.**, Superintendent, Rochester State Hospital: It was rather difficult for me to decide just what to report when it was requested that we give an account of what had been accomplished during the past year, and what we hoped to accomplish during the coming year.

It has been very interesting to hear the two reports that we have just heard. If I could talk a little later I might be able to give a better report.

The water softener has been repaired and changed to a down-flow type. Many repairs have been made to the furniture, floors, windows, gutters and roofs.

The tower on the main building has been repaired and painted. A red light was installed on top-

Repairs have been made to the laundry machinery, power plant equipment, heating and plumbing equipment. A room in the basement of the nurses' home has been repaired and redecorated for the needle department. A room in the basement of the main building was repaired and a new churn has been installed. Numerous plaster repair jobs have been completed. The offices on the first floor of the main building have been redecorated. The superintendent's apartment has been

redecorated. The main building and laundry have been painted on the outside. Numerous other small painting jobs have been completed.

We have been landscaping Silver Creek, which is just north of the institution. The patients and employes have done a great deal of work there this summer, and we hope to have a nice park and lake for the patients and employes. We plan to build a more permanent dam to take the place of the dam which was recently built and washed away.

We constructed a tennis court for the patients at the Receiving Ward.

Seven hundred apple trees and twenty pear trees were set out this spring.

We recently bought sixty-three young steers and plan to pasture them on our rough land. We think we can make a saving on account of the large amount of pasture and hay which we have.

We are discontinuing the renting of 320 acres of land for which we have been paying \$1,400 annual rent. We plan to do more intensive farming on our own land.

We plan to move the piggery and also the turkeys and chickens on cheaper land and also a more desirable location.

We plan during the next year to do as much as possible in the way of repairs, painting and fireproofing.

Arrangements have been made with the Mayo Foundation to take several Fellows who are graduate medical students of the Mayo Foundation Graduate School of Medicine, University of Minnesota. We plan to take about three Fellows October 1st. They will do a certain amount of routine medical work and will attend our clinics and staff meetings. They will also work on problems pertaining to nervous and mental diseases and do some research work.

Mr. Foley: Thank you, Doctor Smith.

May we hear from Doctor Lee?

**S. R. Lee, M. D.**, Superintendent, Willmar State Asylum: I have been at the Willmar State Asylum only since January 1st, and I have spent a good deal of my time getting acquainted and learning something of the anatomy and physiology of the institution, so to speak.

We have, however, a few projects which may be of some interest. The first of these is an employment record. This record consists of employes' applications, together with their letters of reference. At the time of their employment, a record of their clinical history, together with the results of physical, laboratory and x-ray examinations, is added to the record. Notations of special importance relating to the employe, as well as correspondence relating to the employe, are filed with the above record. This gives us a current and permanent history of all who are engaged at the institution.

In connection with the personnel problem, we have a modest start in the making of a job analysis. This analysis consists of stating the duties and responsibilities and typical tasks for each position. The minimum qualifications and lines of promotion are to be established for each position.

We have started another group of records which I believe will be of considerable value to us. It is in the nature of equipment history. The information relative to each major piece of equipment is being collected. When this is completed, we plan to classify the various pieces of equipment and to set up a file consisting of the following sections for each piece of equipment: First, the specifications; second, the name of the manufacturer; third, the names of the consulting and construction engineers; fourth, the price paid; fifth, the date in which it was first put to use. Following this will be details of major shutdowns and the cost of repairs. It is not our intention that this file contain detail function of machines. We will have to rely upon the departmental function reports for this information. I believe that the

use of this record will aid us materially in determining the efficiency and actual costs of our various departments.

We have constructed a small morgue, and began doing autopsies the first of June. I have been rather pleased with the results. During this period of time twenty-eight deaths have occurred in the institution and we have been permitted to do fourteen autopsies. The Department of Pathology of the University of Minnesota has been very kind in doing the microscopic work of sections from these autopsies.

I believe that our major accomplishment during the past year has been in the diagnosis and segregation of the patients suffering from tuberculosis. Much of this work was done during the administration of Doctor Smith. I wish to express ray appreciation for the splendid cooperation and help from Doctor Burns and his staff. We are now in the process of reclassifying the degree of activity of our tuberculosis patients. We are especially anxious to maintain adequate segregation of those patients who are capable of spreading tuberculosis.

Mr. Foley: Thank you, Doctor.

Mr. Yanz, what have you to say for yourself this morning?

W. J. Yanz, Superintendent, Hastings State Asylum: Not very much.

We have a resident physician at the institution now. He is doing pretty well.

We have put in a water softener at the plant; painted the center of the main building; and changed the living quarters on the third floor.

I think that is about all.

Mr. Foley: Thank you. Miss McGregor, may we hear from you?

Elizabeth McGregor, Superintendent, Gillette State Hospital: Physical Plant: We built a garbage house; put roofs on four porches; made the changes in plumbing recommended by the State Board of Health; and repaired the tile roofs, gutters and downspouts.

Improvements on Grounds: This work was done by the ERA men on Ramsey County Relief, supervised and directed by the Hospital—Grading, filling and surfacing east and north part of the grounds; removing dead trees; cement work repairing, putting in walks; preparing garden space for next year.

General Work on Grounds: Cutting grass; garden work; trimming trees and hedges.

Electrical Work: Plan and directory of wiring and fuse boxes done by ERA engineer.

Medical and Surgical: Number of house patients cared for, 743; number of out-patients cared for, 4,610; number of operations, 602; deaths, 15; post mortems, 15; number of laboratory tests, 47,200; number of plaster dressings applied, 2,539; number of x-rays taken, 6,842; number of photographs taken, 6,540; number of patients receiving dental care, 1,836 visits; number of braces and appliances, 2,167; number of physiotherapy treatments, 38,567.

There has been an increase of graduate nurses due to the fact that training schools for nurses have been reduced during the past year from seventy-seven to twenty-seven. During this year we have had from three to ten ERA nurses. This service was discontinued August 15.

Educational: Medical students have regular clinics each week from September to June. Nurses from other hospitals and student nurses' classes have been continued regularly. Regular school work for patients has been carried on from kindergarten through high school in our school department. Our teachers have been supplemented by seven ERA teachers, making it possible for every child of school age to have school work every day whether bed patient or up patient, providing physical condition permits. Twenty-seven former patients graduated from

the University, colleges, or special schools beyond high school training during the year, and all this number have work.

Other ERA activities included special cleaning, washing windows and porches, thirty hours per week, special laundry work separating infants' clothing from all other clothing, and extra cleaning women,

Plans for this year include: Changes in the boilers, changes in laundry equipment, new ranges in the kitchen, and finishing ground floor for laboratory, morgue, lecture room, and record room.

Mr. Foley: Thank you, Miss McGregor.

Doctor Murdoch, may we hear from you, please?

J. M. Murdoch, M. D., Superintendent, School for Feeble-Minded: I think the most outstanding accomplishment in the past year was taking the word "Feeble-Minded" out of the sign at the entrance to the institution grounds. This may seem to be a little thing, and it is in itself, but it has brought about a great psychological change in the attitude toward the institution, not only by our children and their relatives and friends, but also by our employes, social workers who bring children to the institution, and by the community in which we are situated. Formerly the institution was designated as the "Feeble-Minded" in contradistinction from the "Blind" and the "Deaf." Now it is spoken of by the people in our community and the local press as the State School and Colony. This change is similar to the change made years ago when the state hospitals for the insane became simply state hospitals. We of course appreciate that the people we care for are feeble-minded, but nothing is gained by attaching a label. There is unfortunately a stigma attached to the name "Feeble-Minded." Instead of telling a parent his child is feeble-minded, we say: "Your child's mentality is retarded or arrested to such a degree that he needs special care, training and treatment," and we do not argue over the point as to whether the child is or is not feeble-minded.

Another accomplishment is the development of a large athletic field with a regulation baseball diamond with bleachers, where all who are able can watch the games. We have spirited games between teams representing different departments, a very good first nine made up of our boys who play with outside teams, and a very good employes' nine, who stand high in a league of teams from surrounding towns. These games stimulate a feeling of loyalty for the institution. Our children root loudly for the home team.

The tuberculosis survey conducted by Dr. H. E. Hilleboe and Dr. H. A. Burns was an outstanding accomplishment.

Sterilization has been carried on more extensively in the past year than ever before under the direction of Dr. George Eitel. About ten cases are operated upon every three weeks. In the year 1934, 144 sterilization operations were performed, and ninety-two operations have been performed so far this year. A large proportion of the patients operated upon have been paroled.

For some years we have had difficulty in combating Bang's disease in our herd. With the assistance of Dr. C. P. Fitch and others of the Division of Veterinary Medicine of the University, Department of Agriculture., we now have a herd free from both tuberculosis and Bang's disease.

Another accomplishment was the substitution of natural gas for coal in our kitchen and bakery.

Mr. Foley: Thank you, Doctor Murdoch.

Doctor McBroom, let us hear from you, please.

D. E. McBroom, M. D., Superintendent, Colony for Epileptics: There is an old saying that "Children should be seen and not heard," and as the Colony is

the Board of Control's baby, I shall try to abide by this rule of the old adage and cut my remarks very short.

As in most institutions, particularly when they are in the constructive stage, we have been exceptionally busy during the past year in endeavoring to keep up with the building program. It seems that bed space is an especially easy item to obtain, but any of the things that go with beds are hard to get, and in a rapidly expanding institution there are a great many minor items necessary to make it a whole organization and a rounded-out operating unit.

During the past year we have put in about one mile of new sidewalk and two miles of curbing, installed catch basins in the roadways; also putting in 1,000 feet of new drain tile, raising and lowering the manholes and fire hydrants to grade levels. At the present time we are in the midst, of remodeling the dining rooms, service rooms and bakery, to make space for the increase in population.

Throughout last year we made Mantoux tests of all patients and employees, the same as the rest of the institutions. And we participated in a very interesting piece of blood chemistry. This work was established by Doctor Hirshfelder, of the University of Minnesota, and the actual work done by Doctor Haury. They directed their efforts to the determination of blood potassium and blood magnesia in cases of idiopathic epilepsy. The results of this piece of research work have not been published as yet, but were very interesting and in some instances very gratifying, and it seems to prove beyond a question of doubt that there is a lack of blood magnesia and an increase of blood potassium at the time a convulsion occurs.

The past year has been one in which we had to make several radical changes in the institution, as it was in the transition stage from that of a large family to that of an organization, and all of these changes necessitate the working out of many minor details connected with same. Otherwise we have been kept busy about the same as all the rest of you in trying to keep ahead of Old Man Depression.

Mr. Foley: Thank you, Doctor McBroom.

We are sorry Mr. "Whittier is not able to be here this morning, but he was called out of town, so Mr. Rosenberger, the Director of Schools at the State Reformatory, will speak for him. Mr. Rosenberger, we will hear from you, please.

R. H. Rosenberger, Director of Schools, State Reformatory: During the past year Doctor Arvidson has become attached to the Medical Department of the institution in a part-time capacity. His principal work involves examination and treatment of venereal diseases. In this connection each arriving inmate is given two blood tests in addition to other means of examination. Doctor Arvidson also conducts a series of lectures on the control and treatment of venereal diseases, stressing the matter of care and the penalties of carelessness.

Also recent is the present practice of giving each arrival a thorough physical examination and making the results of this examination an active part of the individual's personal history record. Doctor Arvidson makes these examinations and reports to the Medical Department on his findings.

Eye, ear, nose and throat cases are referred to Doctor Strate, of St. Paul. The surgical cases are referred to Dr. George Eitel, of Eitel Hospital.

It has now become a part of the medical procedure to make a dental chart of each arrival and to require dental attention at the inmate's expense where necessary. Heretofore this last has been optional.

The Psychological Department at the institution was organized in the latter part of June and in July of this year, under the direction of W. M. Hales, of the Division of Research. Prior to this time mental tests were given quarterly by the state psychologist. The present department was designed to fulfill a much needed want; namely, a more comprehensive psychological examination of every individual

entering the institution. It was felt that such a study was fundamental to any adequate program of vocational guidance or rehabilitation, since accurate information concerning both the individual's abilities and disabilities must be available for intelligent treatment and guidance.

Since its inception, the psychological work has been given in close cooperation with the Department of Education. Every effort has been made to coordinate the work of the two departments.

At the present time the psychological examination consists of a battery of objective tests and ratings, requiring about three hours to administer. It included a complete individual mental test, yielding objective measures of intelligence, a test of general or common sense information, and a battery of personality tests and ratings designed to measure various phases of character and personality; such as, personal appearance, social adjustment, personal adjustment, moral and ethical discrimination and emotional stability. It also includes an objective analysis of the past record and background of the individual and a comprehensive plan for determining the vocational aptitude of individuals committed to the institution.

The entire academic educational program has been revised and placed upon an individualized, adult level. Standard academic tests which determine the educational level of the inmate are given each new arrival. These tests permit intelligent counseling and are used as a guide in the training of each case. Full-time classes are conducted for the elementary grades for those badly in need of such training. A morning hour preceding the working day is devoted to elementary classes for those who have other daily work in the institution but who have less than an eighth-grade education. A complete high-school curriculum on an adult basis functions as a full-time activity for a number of inmates who are qualified. Included in this is bookkeeping and accounting, commercial law, salesmanship, filing, and related training.

Each new arrival is analyzed as respects his vocational and cultural reading interests. The result of this analysis enables us to establish a reading level and to chart a reading program, both vocational and cultural, that either fills any gaps found or raises the level determined. This new function of our library activities has greatly increased the value of the library.

The shop work has been arranged on a progressive basis with one-half day devoted to that practical training. The other half-day is given to individualized class instruction in various subjects related to that trade. Instruction in the shops is as yet in the hands of various department heads who are not trained teachers.

Through the cooperation of federal and state agencies we have had the advantage of the services of a staff of trained civilian instructors. They have become a distinct advance over the practice of using inmate teachers, and have contributed much to our success in the past two years. These instructors are used in all academic departments and in the classroom portion of our vocational training activities. Further, the St. Cloud Teachers College has furnished us with practice teachers, who earn college credits for their services at the Reformatory.

The last-two summers have seen the successful introduction of a program of physical education. At stated periods each week every inmate whose duties keep him inside the institution buildings reports at the baseball diamond within the walk, where he participates in scheduled kittenball and volleyball games. There are sixty-five teams in five leagues competing in the program. This arrangement provides directed outdoor exercise for our inside workers, and is looked upon as a part of the moral rehabilitation plan, as well.

Accomplishments in physical upkeep, maintenance and additions to the institution include:

Painting: Eight cell houses and dormitories, twenty-one rooms in the school building, officers' dormitory, dining room, kitchen, laundry, Board room, and guard room, were repainted. Altogether 25,457 square yards were redecorated at a cost of \$2,135.89.

New Construction: Addition to creamery, new roof Cell House B, second floor in shoe and machine shop, one well dug, one well drilled, new floor in Cell House B, 507 yards of sidewalk, paved roadway in front of building, three-stall heated garage, new cage for turnkey, dry-cleaning plant, new dormitory to quarter 110 inmates practically completed, 650 feet of retaining wall, new tunnel connecting cell house and new dining room.

Reformatory Camp at Walker: The new camp at Walker consists of two wings 80 x 20 and one wing 60 x 20. It will accommodate fifty inmates. Water, sewage and electric lights have been installed.

Mr. Foley: Thank you, Mr. Rosenherger.

May we hear from you, Miss Patterson, with regard to what has been accomplished at your institution this year?

Inez B. Patterson, Superintendent, Home School for Girls: Just as a moral victory is often inconspicuous but much more difficult to achieve than one of a physical nature, so may be the major accomplishment in an institution where one is dealing with the elusive factor, human nature.

No one individual, irrespective of how sympathetic to the task or how capable as an executive, can personally effect the necessary modifications in attitudes or habits of all the wards of the institution. It therefore becomes necessary to create a medium through which, even at the weakest point, the results obtained approximate those desired. Such medium is a unified staff, performing well the daily tasks, but interested in the institution as a whole end in the long-time trend. With a staff varying in education from early grades to college degrees, in interest from true desire to serve to job-holding for income only; varying in appreciation of the task, from the tight-lipped member lacking in any comprehension of the present-day problems for girls to those who fully sympathize; varying in standards from those not so well grounded ethically to honest members, and on to the more inflexible extreme sticklers for following orders; and from the foolishly sentimental to those whose favorite form of treatment is punishment, with this group much has to be done before there can be assurance that any concept will be carried out.

Regular staff meetings have to be executive in nature because of the multitudinous duties of each member and an ever changing staff. The theories and technique of the work then had to be given in different ways. The first step was the creation of weekly classes, at night, for housemothers and relief officers in one group and kitchen supervisors in another. Considerable effort was required to create interest where there was lack of preparation, years in which no studying had been done, and where there was an accumulation of fatigue from energy-exacting tasks. Those who could not or would not profit from the generalized material, those falling in the before-mentioned extreme categories, were called in for personal conferences, often four being required before errors or the required methods were comprehended. These conferences frequently disclosed an innate inability to perform the task required and an unusual preparation for another, or so sincere a desire to do it right that the member voluntarily returned to the relief field to get a broader scope or stress on a needed phase. The element of "comfortably settling in for old age" was thus destroyed and alertness produced. Dealing as we were with human nature in all its frailty, closer supervision was needed to see what methods were employed in the cottage.

To retain the unity gained and to get a balanced staff, monthly conferences were held by the Assistant Superintendent in each house, attended by both resident officers, in which cottage policies were discussed as well as reviewing the work achievement and behavior of every girl. The difference in social status that so easily arises between housemother and the kitchen staff was materially reduced.

A formerly impatient, deeply-rutted officer said, in defense of a girl who had indulged in a temper tantrum: "But think how far apart her spells are now." Another, in relating an incident, said: "Unfortunately I asked the wrong question when Jean, a rather new girl, brought in three library books minus card pockets. I asked, 'Did you tear these out?' and got the expected answer. So I had her sit down, explained the value of the library, the care we gave books, and so forth, for several minutes. Then, when I asked, 'Who tore the pockets out?' she answered, 'I did.'" Both women admit that there was a time when a punishment would have been hastily meted out and the incident ended abruptly.

The constant and wearying work with the staff has given them a technical knowledge of the development of an adolescent girl, her likes and dislikes; has provided a terminology that made possible the enjoyment of professional magazines and books and the discussions of certain phases of the work with dignity and no embarrassment; and finally a realization that some misdemeanor was no: really malicious or deliberate, and that a serious, deeply hidden cause should be found, and it has created an increased consciousness of technique and a desire to improve the same. To the staff the result is greater contentment and self-improvement, increased interest in work and satisfaction at better results. To the girls the result is a more rounded-out type of training with improving results on parole.

Mr. Foley: Thank you, Miss Patterson. Your remarks were very interesting.

Miss Jamieson, may we hear from you, please?

Estelle Jamieson, Superintendent, State Reformatory for Women; I personally feel that one of the outstanding accomplishments in the institution is in our health program. The Board of Control arranged for Doctor Arvidson to come to us, and with his cooperation, working with our staff physician, they have delved into the treatment of venereal diseases with great benefit to the inmates under treatment.

We have also had the adequate service of Doctor Strate, eye, ear, nose, throat specialist, who comes to us periodically, so that every inmate has received the proper care in this-phase of our health program.

The results of the tuberculosis survey were most gratifying as we learned our population was free from this health menace.

The course in personal hygiene offered the inmates this past winter as part of our educational program proved enlightening to many. We are planning to go on with a course in first aid this year.

Through the cooperation of the Minneapolis Park Board we were able to secure the services of an instructor in music, an instructor in handicraft and an instructor in dancing. They came to us each week, having two classes on each visit, with an average of about twenty in a class. This program was carried on over a period of about five months. SERA paid the salary of the instructors, while the institution paid their transportation.

Our cooking supervisor offered a course in table etiquette, which was elective among the girls. The classes were held in the girls' free time. It was gratifying to know that there were forty who completed this course.

For recreation this summer we organized two kittenball teams, and, of course, picked the best material. We have had many interesting and stimulating games with a kittenball team of girls from Shakopee. This has brought the local people

up to our grounds to watch the games, and it has been a great source of entertainment for our own girls.

During (he past winter each cottage has set aside one evening for dancing and one for playing cards.

Another mark of progress which the girls are enjoying is the modernizing of our wearing apparel. That seems like a simple thing, but nevertheless it has meant a lot to the girls. We have a new style of dress and new winter coats.

The girls have been permitted to hob their hair. Fortunately we have a licensed barber inmate so that the girls are kept trim, and their personal appearance I feel has improved a great deal.

From the standpoint of physical progress, we have done everything we could on the limited funds at our disposal.

I am sure if our farmer and engineer were present they would say that a miracle was performed when we replaced our horse and buggy with a Chevrolet truck.

Doctor Freeman: May I be permitted to ask a question?

Can anyone who is convicted of a crime, anyone serving a sentence, have a license to practice hair dressing or anything else?

Miss Jamieson: Possibly not; but as Friend Husband or someone else has paid the fee and come to the institution with the license, we still classify her as a licensed operator,

Mr. Foley: Doctor Freeman, you are too technical.

Mr. Hegstrom, may we hear from you?

H. E. Hegstrom, Superintendent, State Training School: I was glad Miss Patterson mentioned some of the problems of the staff that the Training School has to meet. I think our problems are quite similar to those she has had.

We are devoting much of our time to the reorganization of our staff, and are now working under department heads. We have selected so far as possible trained and qualified people to head the various departments; such as vocational, academic, engineering, dietetic, detail and general maintenance. Through the reorganization we have all of our employes as closely as possible under the eight-hour law. Formerly, for example, our managers having charge of the cottages for boys worked from fifty-five to sixty or seventy hours a week. Now they have charge of the boys less than eight hours during the regular days. The reorganization has meant a considerable number of new positions and the elimination of a number of others. There were twenty-eight people off our payroll. During the past year there were approximately eighty-five employes. A year ago we employed thirty women and fifty-five men. Now we have sixty men and only twenty women.

We were fortunate, during the past year, to have a highly qualified, trained person conduct classes for our staff members. It helped show the various groups more about the possibilities of an institution and scientific ways of treatment in the correction of the delinquent boys. Through these meetings we probably have a more democratic organization. The employes are acting on committees such as discipline, activities and classification.

As to the boys, we are devoting more time to their reception and classification. We are thankful for the assistance we have received, particularly through Doctor Kuhlmann's department, in the matter of a half-time worker in the field of psychology.

The treatment of inmates has changed to a considerable extent. That is primarily due to the training of the staff during the past year. One of the older employes made the statement in a small staff group not long ago that he felt that corporal punishment had decreased probably ninety per cent during the past year

The daily routine of the boys has been altered. The boys formerly were required to work a full day on what was called housework. Now all the boys help in that work before breakfast, and all of them are assigned definite academic or vocational work if they have the ability to benefit by such training. Those who do not have that ability are used in maintenance work about the institution.

A few of the improvements that have been made: We have remodeled one cottage; new pasteurizing equipment has been purchased following a serious throat epidemic last year. We also have leased additional land, and thereby we are increasing our herd and poultry in order to provide more of their products for the institution.

We have had a number of difficulties during the year. There has been a lot of free, unwanted publicity on runaways, but when it comes to the final analysis there were only eighteen escapes and fifteen were returned, which gave us a minus three number compared to minus fourteen the year before and minus ten the year before that. It, seems strange, but escapes are what the community looks for more than anything as the outstanding criticism of the School. If boys do not run away, then we probably are doing a good job- They do not know what is being done for the boys.

Mr. Foley: Thank you, Mr. Hegstrom. Doctor Burns, may we hear from you?

H. A. Burns, M. D., Superintendent, Sanatorium for Consumptives: The State Sanatorium serves the tuberculosis patients of forty-six counties and the surplus cases from the large cities, Duluth, Minneapolis and St. Paul.

During the early part of the past year we changed our record systems considerably in order to make it possible to tabulate clinical data and use the information on punch cards and a tabulating machine for the improvement of our work.

During the fall and winter we assisted the institutions in their tuberculosis survey.

Throughout the year we have been very busy distributing tuberculin to doctors, clinics and institutions for the testing of school children and others in the identification of tuberculosis infection. This *has* become a routine with the State Sanatorium, and we are now distributing tuberculin to approximately twenty institutions, clinics and family doctors weekly.

The field work was quite aggressively carried on throughout the year in the forty-six counties. There were something like 24,000 Mantoux tests made. An effort was made to organize the work and carry it through the active cooperation of the local medical societies and family doctors in each community, the personnel of the State Sanatorium taking a secondary position in the work. The credit for results following the work was given entirely to the physicians in each neighborhood and to the local medical societies in each county.

For several years there has been considerable agitation in Minnesota for the construction of a building for the care of the tuberculous Chippewa Indians resident in Minnesota. This plan and campaign finally culminated in a building which was opened August 1st. The capacity of the building originally was 117 beds. By proper manipulation of some of the activities we can put in patients up to a capacity of 198 beds. So far we have authority to hospitalize only eighty-five cases on an appropriation of \$62,000 as allocated by the Indian Bureau for this purpose. We have the bed capacity rilled so far as the present allotment of beds is concerned.

The Indian patient has proved to be a very tractable, cooperative individual, who is just as anxious to get well as anyone else, and is as cooperative, so far as the staff is concerned as any other patient.

We feel that with 200 beds available in the future, we still will be short approximately 200 beds before we will have sufficient isolation capacity to handle properly the tuberculous Indian problem.

During the past year our occupational therapy was changed from a rather amateurish program to quite a professional one. We now have a very well trained woman in this work, and it is proving to be a most satisfactory adjunct, to our treatment of the tuberculous, and to the entertainment of the patient, as well.

During the past year we have planned to add surgery to our medical activities- This plan has progressed to the point where we now have all the physical equipment necessary to carry on surgery, and we hope within the next few weeks to be able to get the medical personnel necessary to carry on this work. With the addition of surgery to the medical work of the Sanatorium we will be eligible to the American College of Physicians in the near future.

One other advantage that has appealed to me very much is the addition of a Reformatory camp to the State Sanatorium grounds. This camp, as previously explained, was begun in the spring, and is now very nearly completed. We feel that our assistance in offering these boys an opportunity towards rehabilitation is an opportunity, which if not taken Advantage of, would be a remission in our duties. I am sure that we are going to receive a great many more material advantages in return.

I think that is all, Mr. Foley.

Mr. Foley: Thank you, Doctor Burns.

Mr. Vevle, may we hear from you?

M. R. Vevle, Superintendent, State Public School; I wish to divide my report as follows:

1. Placement Service: A careful and detailed study of this service has been made along the following lines: 1. Commitments to the school. 2. The procedure of placement and the return of children to the school. 3. The system of records and other details of case work.

In July 1934 the School reported to the Board that it was carrying 308 children on the waiting list. This list was analyzed and letters written to judges and county welfare, boards in an effort to determine the exact status of each case. Those urgently in need of care were accepted as soon as the capacity of the school warranted, and others were eliminated because they did not come under the provisions of law with respect to' the State Public School. Those remaining were rechecked and a new file worked up for the successful handling of them. These cases were divided into three groups, namely: First, active; second, inactive; and third, dead. Those that had been accepted and would be brought in at an early date were placed in the active file. Those that were acceptable but for whom some other plan had been made were placed in the inactive file. We expect these cases to reopen again within a short period of time. Those for whom permanent plan had been made and for whom we do not expect any future request for service were placed in the dead file. All new admissions arc now taken from the active file. On this date we have a waiting list, as follows:

Active	Inactive
Aitkin County. . . . . 1	Blue Earth County. . . . . 4
Blue Earth. . . . . 1	Brown. . . . . 1
Cass. . . . . 1	Crow Wing. . . . . 1
Hennepin. . . . . 30	Dakota. . . . . 4
Itasca. . . . . 1	Goodhue. . . . . 1
Polk. . . . . 3	Hennepin. . . . . 3
Ramsey. . . . . 3	Le Sueur. . . . . 1
Renville. . . . . 2	Nobles. . . . . 2

St. Louis . . . . .	4	St. Louis . . . . .	19
Washington . . . . .	2		
	4S		
Total . . . . .			

The new law, sponsored by the Board and by the Children's Bureau, which was passed at the last session of the legislature and which provides that the juvenile court judges must give ten days' notice to the Board of Control before they can commit a child to the Board or to the State Public School, has been of great value to us. As a result we are now able to secure adequate information before the commitment to make it possible to either accept or reject. As a result our active file is a live file and of value to us, to the courts and to the child welfare boards of the state.

In the placing of children in homes we ere following a well defined procedure. We are using four types of homes, namely, adoptive, free, work and boarding. We are setting up standards for each type and are, using as our guide the helps that are available in this field. We are likewise setting up a program of individual diagnosis which will enable us to --elect a child for the approved homes on an intelligent, basis. In order to assist with our case work we are revising our forms and reorganizing our files. At this time we are cheeking the materials in all of the files of our current cases, are establishing a foster-home file, and are working out a program for the certification of all of our boarding homes.

II. The School Department: One of our organization problems is the overload that exists in the intermediate grades and which cannot readily be taken. care of by the employment of another teacher. By making a careful check of the pupils and their distribution it has been possible to hold the maximum assignment to a teacher to about forty. By the employment of a music and dramatic arts teacher and a librarian we have increased the amount of service to the pupils considerably. We have a group of girls who have, gone as far as is consistent in school and who will have to go out as domestics when they are eighteen. For these we have developed a practical course which meets for one period a day under the direction of our home economics teacher. In addition they are given from four to five hours of training in a selected home in the community. This plan has already proven, its practical application in that we have placed three girls in splendid homes with a salary adequate for their needs. This same service will be extended to the boys as soon as some needed changes are made.

In order to adequately provide for the religious education of all of the children we have organized this work in our regular school department under the direction of our regular teachers. The younger children are given three twenty-minute periods per week and the older two thirty-minute periods per week. On Sunday we have a chapel hour for all of the children conducted under the direction of one of the officers and with the assistance of a chaplain. All of the Catholic children are taken to Sunday morning mass through the courtesy of the Catholic churches who are providing a bus for their transportation. About one-fourth of the Protestant children find it possible to go to church Sunday morning, and we expect that all of them will be at some church at least once a month. This plan takes the place of the previous organization which provided for the religious education on Sunday mornings only.

III. The Farm: Because of the evidence of Bang's disease in our herd we made an application for the Bang's test. Jointly with this testing program we made a study of the production record of each animal. To date we have sold off all of the positive Bang's reactors and a few unprofitable cows. By so doing we built up

our herd average from 513 pounds in January to 925 in May and increased the return for each one dollar of feed fed from ninety-eight cents in January to \$4.06 in June. There has been some reduction in these figures for the summer months, but there is a noticeable upturn at this time. Our plans for the winter will increase the efficiency of this important department.

A realignment of the garden work and the remodeling of our potato storage will help materially in providing sufficient vegetables for the demand.

IV. Housekeeping: In the housekeeping department we solicited the help of Miss Ferbert in making a study of menus and related services. Changes in menus, type and amounts of food served to children were agreed upon. As a result the food standard of the school has been raised and a greater variety and amounts used. We have started our plan for the using of the same menus for officers and children in the housekeeping cottages, and are considering the possibility of getting all of the younger children into housekeeping cottages so as to permit a more careful supervision of diet.

V. Repairs and Replacements: The repair and replacement program has required considerable attention. Many roofs, gutters, downspouts, and floors, were very much in need of repair. By concentrating on the buildings that were in greatest need we have succeeded in nearly completing this type of repair. We are still very much behind on our whole repair program but are gradually gaining ground.

Mr. Foley: Thank you, Mr. Vevele.

May we hear from you, Mr. Elstad?

Leonard M. Elstad, Superintendent, School for the Deaf: Such an assignment is really a very fine thing. We go on from day to day during the year and do the things that are necessary, but it takes an assignment like this to cause one to actually sit down and add up the accomplishments of the past year. It is surprising how few really large accomplishments can be listed, and yet it is not the spectacular things that we pride ourselves on.

At the School for the Deaf our object is to give the deaf children of the state as good an education as is possible in the time allotted. This spring we graduated a class of twelve fine young men and women. This class has been recognized as one of the finest that ever graduated from our school. As evidence of this fact three of the class passed the entrance examinations to Gallaudet College, the only college for the deaf in the world. There are some 125 students in this college, which is federally owned and operated. These come from state schools throughout the United States. With these three who will enter this year, Minnesota will have seven representatives at the college. When we consider that there are forty-five state schools sending children to this institution, Minnesota is well represented.

The past year's school work went along very smoothly due to the excellent cooperation of all our teachers. Teaching the deaf is a highly specialized field of teaching. It takes a large amount of patience and ability. Our teachers are working under a heavy six-hour load each day, but there has never been any criticism because of this heavy duty.

We feel that real progress has been made this past year with our deaf-blind class. There are seven in this class. It was possible to make arrangements with Perkins Institute for the Blind in Massachusetts so that an exchange of teachers could be made. Our teacher went to the Perkins Institute for the last three months of the school year. In exchange we received one of the teachers from Perkins Institute to take care of our deaf-blind class. Perkins Institute is recognized as one of the outstanding institutions in the country. It was a real opportunity for our teacher to spend three months there and we were fortunate to have a really fine exchange teacher so our class could go on with the regular work. The result of this

exchange should be apparent immediately this year. We feel the exchange of such teachers is a fine thing and I hope that such a program can be arranged for teachers of the deaf. This matter was brought up at the convention at Jacksonville, Illinois, this summer. We recognize that there are experts in all lines of work. There are educational experts also. Each school usually has some one teacher who is particularly well trained in some phase of the work and an opportunity should be provided each school to have these experts spend at least a week or two in the various schools at some time during the year. We, have exchange professors in the universities. I feel we shall have exchange teachers in our schools for the deaf before very long. This past year Virginia, Michigan and Minnesota made use of this exchange privilege with Perkins Institute.

The health of the children was further protected this past year through the establishment of a dental room in the school. In years past our children have had to go to the dentists down town for their dental work and then only when the parents would send the money. With this new arrangement the dentist comes to the School two days each week and does the work in our own dental room. The parents are charged a reasonable amount for the work done. In cases where the parents cannot afford to have the work done it is done gratis. In this way no child is neglected. The value of this new arrangement became apparent at once. Several children who had not had work done for several years were taken care of. Some serious teeth conditions were corrected. The money taken in from those who can afford to pay for the work is sufficient to take care of the actual cost of the material for the work and part of the dentist's salary.

Of course we were pleased to be included in the Mantoux test program. We were happy to find that only one child had to be hospitalized. This child is at present in a sanatorium. No instructors or employes were found to have tuberculosis.

In our work one of the prime essentials is to educate the public to what we are doing. The success of our work is gauged by the success our graduates have in getting positions when they leave school. The success our graduates have in getting positions depends to a large extent on what the employes know about the deaf. Usually our graduates can do the work if given a trial. We are therefore constantly striving to give the general public: in the state a true picture of what the deaf are doing at the School and can do when they leave school.

Our athletic teams do much to place our boys before the public. This past year we had an excellent football team. As evidence of this fact we point to the Austin game which ended in a tie, six to six. Austin was recognized as one of the outstanding teams of the state. Our boys played with Mankato and, although they lost, they played a very good game. It was interesting to stand along the sidelines and hear the remarks of the spectators. Some cannot understand how the deaf can play football. All these remarks just go to show that we must be forever alert to opportunities of educating the public as to what the deaf can do. This year our football schedule includes games with St. Paul Central and Cretin High of Minneapolis. It is our desire to schedule such games because it gives our boys new contacts with hearing boys and does a real piece of work educationally.

Our senior young men and women came to the office last fall and asked if they might edit and publish a school paper of the students by the students and for the students. We have published a bi-monthly school magazine called "The Companion" for many years. This new publication was to be in the form of a newspaper. Permission was given for this and the result is the monthly paper named "The Hilltopper." This has been well edited and printed and has given us favorable recognition in the exchange papers of the various larger state schools that have school papers. This is just another way of educating the public.

I have tried as far as possible to accept every invitation to speak before public gatherings on the work done at the School for the Deaf.

The School has cooperated with Doctor Newhart of the University Clinic in conducting hearing tests in public schools throughout the state. As many as 2,000 children have been tested in a day. In the evenings Doctor Newhart has spoken on methods of preventing deafness and I have spoken on the education of the deaf. It is our hope that eventually the state may have a universal system of hearing tests so progressive deafness may be eliminated. It is mainly an educational program. We find that as soon as a city school system has had the children tested they are anxious to have it made a part of their regular health program. These testing programs have been given at all the normal schools throughout the state. After testing the normal students we have also tested the parochial and public school children in the cities. Various other cities have asked for the tests and they have been given. There is a federal PWA project in Washington for consideration at the present time. If this project should happen to go through, five units will be at work throughout the state for a whole year conducting these tests. Of course we hope the project will go through.

In order that the School may have an accurate record of all graduates and former students of the School, a questionnaire was sent out during the past year to 1,000 graduates and former students. We had responses from over 500 of these. We received valuable information from these questionnaires as to the unemployment situation of the deaf and reasons therefor, and also suggestions as to what improvements could be made in our vocational department. Those who have tried to get positions on the basis of the training they received here are, of course, the best judges of the practicability of our present plan of vocational training. We did get many valuable suggestions. One of these was that we should have a shoe repair department. This we are starting this fall. It is our aim to keep this file of graduates up-to-date. Each year we shall send a card to those who answered the questionnaire asking for any change of address, change of occupation, or any other interesting information. In this way we shall be able to keep accurate information on each one.

Taking everything into consideration, we feel that the past year was a very successful one. We are looking forward to the new school year which opens on the 17th, and we hope that if a similar opportunity is afforded next year to make such a report, we shall have some real achievements to report.

Mr. Foley: Thank you, Mr. Elstad.

Mr. Lysen, may we hear from you?

J. C. Lysen, Superintendent, School for the Blind: Early last spring a visitor asked one of our teachers if the lighting system in our classrooms had been intentionally planned to provide as little light as possible. The teacher in question was able to counter by stating that plans for a new lighting arrangement had already been announced.

I mention the above incident because it represents a transition from obsolete lights to modern luminaries, designed to protect the vision of more than thirty-three per cent of the boys and girls attending the Minnesota School for the Blind.

At first thought one might be led to believe that illumination would play a negligible part at a school such as ours. We have, however, a large number of students who are able to use ink print textbooks even though their vision falls in the classification of "industrially blind." Last year thirty-nine boys and girls, out of a total of 114 students, were classed as "sight-savers."

Permit me to read at this point a sentence or two from a letter written by a graduate of the Minnesota School for the Blind, who has two daughters now in attendance at our School. She writes: "As for the improved lighting facilities for

the sight-saving students, if we had anything as grand in my day, I probably would have better vision and general health today than I have. It was perfectly absurd, the utter lack, in the old days, of protection of any sort for weak, defective eyesight."

By means of our new indirect luminaries we have increased our classroom light efficiency by more than 2,000 per cent. I know this to be a fact because I personally checked old and new lighting units by means of a light meter. Where formerly the average reading of artificial light in all our classrooms was only one-foot candle, one-fifth enough for even coarse work, now the average is twenty-three foot candles. The last named figure brings the light available into the level of "fine work and print." This amount of artificial light will supplement natural light so as to bring the level to the thirty-five-foot candle mark, which is the amount needed for people with defective vision. It will interest you to know that readings of natural light taken Sunday morning, when the sun was shining, showed in practically every classroom minimums of five-foot candles and maximums of thirty-two-foot candles. Light decreased rapidly as the meter was moved from the windows.

In planning our new system we used the simple formula given us by General Electric light engineers of figuring five watts of light for each square foot of floor. Theoretically this should have given us a reading of twenty-five-foot candles. To reach this goal, however, we found it necessary to wash our ceilings and walls and to apply three coats of the best semi-flat washable paint obtainable. Washing and painting increased our light efficiency an average of six-foot candles. Painted rooms have a light reading of twenty-three-foot candles; unpainted rooms, a reading of only seventeen-foot candles. Obviously increased wattage and modern lighting units were not enough; paint also was needed.

The new luminaries have oxidized aluminum reflectors that throw the light from the inside-frosted, double filament lamps against the ceiling. This produces a soft and diffused illumination which is absolutely free from glare or shadow. Three-way switches make it possible for us to separate our 500-watt Mazda lamps into smaller units of 200 and 300 watts.

Our classrooms' illumination divides itself as follows: 200-watt filament, eleven-foot candles; 300-watt filament, sixteen-foot candles; above filaments added, twenty-three-foot candles.

Mention should be made here of our ceiling and wall colors, as they added to our light efficiency. In the course of this study we found that color reflections vary tremendously. Spanish blue, for example, a color we would not even consider, has an efficiency of only seven per cent as it absorbs ninety-three per cent of the light which strikes it.

Our ceilings are new ivory and have a reflecting efficiency of about eighty per cent. Our upper walls, painted a deeper ivory than the ceilings, have a light efficiency of about seventy-five per cent; the lower walls of taupe reflect some fifty per cent of the light striking them. By cutting through years' accumulations of dark varnish on our floors and by treating the clean maple with transparent sealers and finishers, we added greatly to the light contents of our classrooms.

I brought with me this morning a cost sheet, of one of our newly equipped classrooms. This sheet shows the type of lights which were formerly used in this typical room. It shows, further, the cost of the new equipment, of the paint, of sanding the floor and the cost of our own labor, figured on a basis of outside help. Anyone wishing to look it over may do so. I have with me also the meter which we use in taking our light readings as well as a chart of paint-reflecting efficiencies.

Similar lighting units will be installed in our remodeled hospital, in the rooms of our industrial building and in our music studios. Added units will be placed in all study rooms.

J. B. Fitch

Chief of Dairy Husbandry, "University of Minnesota

I predict that our new lighting system will prove a real addition to our sight-saving facilities. A series of *tests* will be run off to determine the difference in muscular fatigue when old and new light units are used. There is certain to be a lessening of eyestrain. If we succeed in checking loss of vision in only one child our investment will have been paid many times over.

Upon the request of General Electric light engineers, complete tabulations of this project are being prepared and will be sent to Nela Park, Cleveland, home of General Electric's lighting laboratories.

Mr. Foley: I think we have heard from all the superintendents present.

We certainly appreciate the fine talks that have been given this morning. I, for one, have found out a lot of things that I did not know.

I think everyone would like to hear from you, Mr. Carlgren.

C. R. Carlgren, Member, State Board of Control: Mr. Foley and staff, I do not believe there is much I should add this morning. I have been greatly interested in the reports made by the superintendents; unquestionably you are all devoted to your work and progress is being made. In accordance with the old saying, "We learn by imitation." Originality is rare. Mechanical science makes advancement; so science in all fields made advancement. As those advancements are made, we become the beneficiaries. And I think it is well that we utilize the development made in the scientific world to the fullest extent financially possible for our institutions.

We all know that a number of improvements could be made in all institutions if funds were available. I have been impressed by the lack of modern equipment in some of our institutions. This is particularly true at the State Training School at Red Wing. The equipment there is obsolete in the extreme for an institution where we are dealing with normal boys and a real effort should be made in the coming biennium to secure adequate appropriations in order to standardize the equipment in that institution.

I believe you were modest in making your reports this morning in reference to your accomplishments. As an example, I believe it may well have been mentioned that the dark solitary cells at the State Reformatory were changed by providing openings in the outer doors so that daylight might enter. I think that is something that was proper and in line with modern trend in the treatment of inmates in penal institutions. I thank you all for the reports you have made.

Mr. Foley: Thank you, Mr. Carlgren.

I think you all will agree that we have had a most interesting session this morning, and I think you will find the afternoon session also equally interesting. At two o'clock Professor Fitch, Chief of the Dairy Division at the University Farm School, will talk about the institution herds. Most of you, I am sure, will want to ask him a few questions. After that Doctor Kuhlmann will tell us something about his work, what he has been doing recently and how he is doing it.

We will adjourn for lunch, which will be served in the State Capitol restaurant.

## AFTERNOON

Mr. Foley: Professor Fitch, Chief of the Dairy Division of the University of Minnesota, who is to speak to us this afternoon, was connected with the Kansas State College for many years, and I am sure he will have some interesting facts to give you relative to state institutional herds of Kansas as well as the Kansas State College herd.

Most of you know that Professor Fitch has been kind enough to make a survey of the majority of our herds, and I feel sure you all will be glad to hear him and to learn what he thinks about them.

Professor Fitch.

Mr. Chairman, Ladies and Gentlemen, as Mr. Foley said, I am Chief of the Dairy Division of the University of Minnesota. I am regarded as a newcomer, having been in the state since February 1st. During July and August I have visited the dairy herds at thirteen of the fifteen institutions having herds.

I do not know how great an interest you may have in some of the things I am going to say, but I am going to make my talk rather short, and hope that at the close you may want to ask some questions that have occurred to you.

One of the first contacts I made in Minnesota was with Doctor Cotton, who told me something about the state institution dairy herds and the work of the Live Stock Sanitary Board in connection with the, state-owned herds.

My interest in state-owned dairy herds dates back about twenty-five years, during the time I spent in the state of Kansas, where I had some supervision over the state institutions' dairy herds. Upon coming to the University of Minnesota I was immediately interested in Minnesota state, herds, not only because I was interested in dairy cattle in general, but because I was accustomed to working with men in the state-owned institutions in Kansas.

I certainly appreciated the cordial reception that I received at all the Minnesota institutions. I was very cordially received not only by the superintendents I met but by the stewards, the farmers and the dairymen.

I have given Mr. Foley some of my impressions at certain institutions, and I think Mr. Foley in turn has sent them on to you. I thought at the close of my talk you might have some questions regarding them.

I have visited these herds more as a disinterested party. My main interest is dairy cattle, the feeding and management of dairy herds.

In visiting the state herds I got the impression that there was not enough attention paid to the individual production record of the cows. By that I mean that in many cases, when I asked the herdsman what his herds averaged, he took it to mean (he daily milk production per cow. Most of the stewards figure on the production per cow per day. By average production we mean the average butterfat or milk production per cow for the lactation period or for the year.

I think each herdsman should know the average annual production of the cows in his herd. Even in the larger herds he ought to be able to quote quite a number of records, and certainly he should know the low producers. At the same time he should form in his mind a certain minimum production as a basis for culling. I would say that about 300 lbs. of butterfat per year would be the dividing point. This last year, with feed conditions as they have been in certain sections of Minnesota, probably we cannot draw such a hard-and-fast rule, but in most herds that is the minimum.

If we use a bull in our herd, we should be watching the production of the daughters as compared to the dams. We should be comparing their records to see, whether that bull is building up or pulling the herd down. The sire affects every female in the herd through his siring the offspring. That is why we are more interested in the sire than we are in the female. In many cases in our state herds about the only requirement is that the bull be young, easy to handle and a quick server. I do not know what the average age of bulls at the institutions would be, but most of them are around two or three years of age. In only a few cases did we have bulls kept long enough to know what the daughters were doing as