

John M. Scudder, M.D., Cincinnati, O., believes that scarlet-fever may be communicated by milk. He has traced one such instance, where the milkman's children had the fever, and it was communicated to customers at the isolated points. He thinks this, however, is rare. Dr. Scudder further adds, "I had one case in which the disease was communicated five months after recovery, by playing with dolls and toys which had been locked in a drawer during that time. In another case, in the family of Mr. ———, the time was eleven months. There could be no mistake in either case. In another case the circumstances pointed to a contagion fourteen months old." He thinks that boards of health should distinctly mark each house 'Scarlet-fever Within.'

A. P. Richardson, M.D., Walpole, N.H., sends the following case, which came under his observation: "A child had scarlet-fever in Keene, N.H., and late in the stage of desquamation visited a friend in Walpole, N.H., slept with a child who died of malignant scarlet-fever a few days after, being sick only a few hours." He adds, "I remember the mother of a child which had died of scarlet-fever sent some of the deceased's playthings to a child in another family, the latter being sick with the disease soon after."

W. S. Strode, M.D., Bernadotte, Ill., writes, "In March, 1884, scarlet-fever was brought to Bernadotte by a family (resident) visiting another family six miles distant, in which a small child had just taken sick, said sickness being accompanied by a red rash. A little boy four years old of the above family, after a few days, took sick, the sickness being accompanied by a rash, not very prominent, and died in twenty-four hours from the time of the first symptoms. The physician diagnosed the case as diphtheria, and a number of children were permitted to see the corpse and attend the funeral. Two or three days later, the remaining children (two younger) took sick with the same symptoms, and I was sent for, and at once proclaimed it scarlet-fever, and immediately set about to guard against its spread by having the school stopped, and all families that had been exposed isolated. There were nineteen cases that broke out with the disease, all in families that had been exposed to the first case. No more deaths, and not all the children in some of the families contracted it either, though exposed to it for days. I would say, that, at the time of the above epidemic, my family consisted of four children, aged respectively one, six, nine, and twelve years. I took ordinary precautions, after visiting the families infected, to guard against carrying to my own family or that of others, by changing my outside apparel at my office, washing, etc., and by going about in the open air for some time. My children did not become infected. Three weeks later, that is, after all the cases had recovered, it was again brought to town by a visiting family; this family unknowingly being exposed to scarlet-fever on the train, and two children breaking out with it in two or three days after they arrived. But previous to this time the lady that the mother of the children was visiting put on her shawl, and came to my house, and, without removing her shawl, took my baby in her arms and held him for some time. In four days he broke out with a typical scarlet-fever rash; and in from four to seven days from this time the three older children of my family also broke out with it. The three children of this lady also had it, making nine additional cases. All recovered. By a strict quarantine the contagion did not spread any further."

G. P. Conn, M.D., Concord, N.H., member of the State Board of Health, says, "In reply to your inquiries, allow me to say that over thirty years of dealing with scarlet-fever and kindred disorders has not convinced me that I know all about its origin or its development. On the contrary, I am constrained to add that I fear we have not solved the problem, nor are we likely to do so at present unless by accident. I have found so many instances where it could not be traced, and in other cases where one in a large family of children would have the disease while all others would escape, that I feel that my knowledge is hardly worth repeating. I do believe that there is a vast difference in the degree of cases, and that in some instances it arrives at a development where none unprotected will escape, while in other cases none will be made ill except the more susceptible. Unfortunately, the profession are not yet able to determine to which class a given case belongs, and therefore it is necessary to carefully isolate all in order to be sure."

George J. Engelmann, M.D., St. Louis, Mo., relates the following

striking cases: "Mr. H., living in Belleville, Ill., had a child sick with scarlet-fever, bade the child good-by, drove fourteen miles in an open buggy to a farm, shook hands twice with a young lady there, and took dinner with the family. He saw no more of the young lady, but was busy outside with the father during his visit. There was no scarlet-fever in the neighborhood of this farm, yet that young lady, twenty-one years old, the youngest in the house, took the scarlet-fever, infected by Mr. H. The clothing of children who died from scarlet-fever in Denver was taken to the house of Dr. R. in St. Louis, after having been put away in camphor for the winter, and gave scarlet-fever to all of Dr. R's children eight months after the decease of the children in Denver."

H. Hartshorne, M.D., Philadelphia, Penn., reports, "I know of no valid reason for believing that scarlet-fever ever arises, at the present time, except by contagion from a pre-existing case. I have no doubt whatever of the contagiousness of scarlet-fever; although, as in the case of other communicable diseases, some persons exposed may escape being affected by it. Having withdrawn from the active practice of medicine, I cannot give precise details of such cases coming under my personal observation; but they have been amply sufficient to confirm me in a strong conviction on the subject. When a person who has had scarlet-fever ceases to communicate it, must depend partly on the measures taken—by repeated bathing, change of clothing, etc., after recovery—to remove all remnants of the eruption. When such care is taken, thirty days from the beginning of the attack ought to suffice. With average care, it had better be made forty days. I have had direct information of several instances in which a house, not disinfected after scarlet-fever had been in it, gave evidence of infection remaining in it several months after the recovery of the patient so affected in it. I believe (from the above-mentioned reliable information), that, without disinfection, rooms are more liable to the retention of the contagion of scarlet-fever than persons who have had the disease. In populous cities the dissemination of scarlet-fever is apt to be so wide, and the means of communication so unavoidable, that no benefit is likely to result from requiring cases of it to be reported by physicians or others to boards of health. Boards of health, if such reports are received, should advise the sequestration of the patients as far as practicable, especially from other children, and, on their recovery, should insist on thorough disinfection. The spread of scarlet-fever could be diminished, at least, very much, by isolation of patients during the attack, disinfection of bedding, clothing, and rooms, etc., on recovery, and all measures of sanitary improvement (in cleanliness, ventilation, etc.) which lessen the prevalence and mortality of *all* contagious, infectious, and epidemic diseases. I doubt very much whether any thing can be done, by the use of remedies or otherwise, to prevent well persons from contracting scarlet-fever when they are exposed to it. It is *a priori* improbable, though not impossible. When a medical student, residing in a house in which there was scarlet-fever, I took belladonna for several days, and escaped the attack; and I have known another instance of the coincidence of the use of belladonna with escape or exposure. But the contagion of scarlet-fever is more uncertain as to individuals, than that of measles or small-pox; that is, a greater number of those exposed to it may escape it than either of them."

THE TEACHING OF DRAWING.

IN a paper on the teaching of drawing, read before the College of Preceptors by T. R. Ablett, Esq., and reported at some length in the *Educational Times*, the educational value of the subject is brought out with a strength and clearness that render the paper of more than usual interest to our educators. Mr. Ablett considered drawing simply as a means of education, and explicitly set aside any treatment of it as an accomplishment or as a training for artists. He pointed out that the mode of instruction in drawing, taken in this sense, would naturally differ from that followed when the production of artists was aimed at, and must be adapted to school-children most of whom have no special aptitude, and little time for practice. To raise drawing to its proper position, we must prove that it is one of the bases of education, and should be taught to all children, whatever their future vocation. We must also prove that it can be taught by collective methods as readily as arithmetic

or reading. The speaker then summarized the educational advantages of drawing, as follows: I. It brings into active use certain faculties and powers of the mind, which can be reached to an equal extent in no other way. For example: correct ideas of proportion and scales are developed, the graphic memory is improved, accuracy in observing is promoted, the powers of description are increased. Although drawing is a universal language, yet few are able to use it. II. Drawing facilitates the acquirement of the simple elements of education. For example: spelling demands a power of remembering the look of words, since in English the sound is not always a trustworthy guide. The improvement of the graphic memory will aid in learning to spell. Again: a child may be taught to draw before it is possible or desirable that he should learn to write. The pen is the worst of drawing-tools, and should not be the first to be put into the hands of children. The earlier use of simpler drawing instruments will facilitate learning to write. Again: drawing teaches the arithmetic of space, as figuring teaches the arithmetic of numbers. There is no reason why the child should be taught one and not the other. The arithmetic of space may be taught as soon as a child can use a ruler and can understand something of drawing to scale. Furthermore, facts which in figures make no appeal to the mind can be readily grasped by means of drawing, especially if these are made by the pupils themselves. In all these ways drawing actually improves the mind's capacity for learning other subjects.

As a rule, the teaching of drawing is in a very backward state; for art teachers, so called, as a rule are poor teachers, and the whole instruction in this branch has been hampered by the prevalent belief that no one should learn drawing who has not a special talent for it. Then, too, collective methods of teaching have not been properly developed. To accomplish the last-named object, it is essential that the members of the class be so arranged that each one can have approximately the same view of the object to be drawn. Object-drawing is the most difficult branch of the subject to be taught collectively, but it can be done. For good class-teaching of object-drawing, three vital principles must be observed: (a) the object must be a large one, that all can easily see; (b) all members of the class must obtain approximately the same view of the object; (c) the teacher must be acquainted with class management and with the subject, and able to demonstrate principles and methods with ability and enthusiasm.

Mr. Ablett then presented the pedagogic aim of drawing in the different grades. In Class 1 it is, (1) to develop accurate observation, (2) to connect writing and drawing, (3) to ward off color-blindness, (4) to cultivate the perceptions, (5) to teach outline-drawing from real objects which present no difficulties in foreshortening; in Class 2, (1) to call attention to the difference between the real and apparent forms of simple objects and curves, (2) to cultivate the graphic memory, (3) by the dictated drawing to insure a knowledge of art terms and give facility in working from verbal instructions; in Class 3, to teach the leading principles of drawing in outline from the things of every-day life; in Class 4, to develop a useful power in drawing from rounded objects (plants and casts) that will serve as a stepping-stone between drawing from simple objects and drawing from the antique; in Class 5, to give a knowledge of shading from real things (this will assist the pupil materially in acquiring the principles of painting, should he ever want to do so); in Class 6, to enable those who have passed through the preceding classes to begin the study of the higher branches of art.

From the character of the discussion that followed Mr. Ablett's excellent paper, it is easy to see that the English schoolmasters are far behind our own, so far as understanding and appreciating drawing are concerned.

CASE SCHOOL OF APPLIED SCIENCE.

LEONARD CASE, the founder of Case School of Applied Science, was one of the few wealthy men who continue in after-life the literary and scientific work begun in college. Inheriting a large estate, he was relieved from the necessity of turning his acquirements to account in making a living, but he was nevertheless a lifelong student. He was one of a group of young men, who, under the leadership of the famous Dr. Kirtland, formed the Cleveland Natural History Society, and accomplished such excellent work, as is

shown by their publications, and by the large collections now in the rooms of the society.

In general literature he was a careful student, and he was a writer of marked ability. His natural tastes, however, led him to give most attention to mathematics and natural science.

Prizing education and culture, he determined to do what he could for their advancement. His first gift to Cleveland, in pursuance of this idea, was Case Library,—a splendidly equipped and endowed institution, and, by the courtesy of its trustees, a valuable adjunct to the School of Applied Science. The magnitude of this public benefaction was, however, far surpassed by his later and more munificent gift for the school.

His deep interest in his favorite studies led him to desire that others should have an opportunity to pursue them under even more favorable conditions than he himself had enjoyed, and to that end he determined to found and endow a scientific school of high grade.

On Feb. 24, 1876, he executed a trust deed, setting apart certain lands to endow a scientific school in the city of Cleveland. In the trust deed he directed the trustee, Henry G. Abbey, "to cause to be formed and regularly incorporated under the laws of Ohio, an institution of learning, to be called the 'Case School of Applied Science,' and located in said city of Cleveland, in which shall be taught, by competent professors and teachers, mathematics, physics, engineering (mechanical and civil), chemistry, economic geology, mining and metallurgy, natural history, drawing, and modern languages. . . . And without intending to make it a condition or limitation of this conveyance, or any binding restriction upon the power of such trustees, the said grantor does hereby recommend to them to hold said property without alienation, and apply the rents, issues, and profits thereof to the uses and purposes above, and that the expenditures for such institution be not permitted to exceed the annual income derived from said property."

The value of the property thus dedicated to the cause of scientific education was about a million and a half dollars. It consists of real estate, a considerable part of which is centrally located in the city. One parcel is the City Hall Block, including both the building and the land; another is an entire block of land cornering on the City Square; and still others, of blocks of land less centrally located. The trustees have followed the recommendation of the donor, and have adopted the policy of leasing the land, so that a secure and increasing income to the school is assured.

After the death of Mr. Case, Jan. 6, 1880, the school was incorporated, and in 1881 instruction was begun in the old Case homestead near the City Square. The addition of new departments of instruction, and the rapid accumulation of apparatus and appliances for the laboratories and class-rooms, soon rendered more ample accommodations necessary. An admirable site was procured for the school on Euclid Avenue, opposite Wade Park; a commodious building was erected from designs by John Eisenman; and in the fall of 1885 the school took possession of its new quarters.

On Wednesday, Oct. 27, 1886, the new building and all of the valuable collections it contained were destroyed by fire. The trustees and faculty of Adelbert College generously offered rooms for the use of the school in a dormitory building standing very near Case School, and recitations and lectures were resumed on the following Monday, work having been suspended but three days. A temporary laboratory was erected for immediate use, instruments and apparatus were procured for the class-rooms and laboratories, and the work of the classes proceeded with comparatively little interruption.

The school is greatly indebted to the well-known mechanics, Warner & Swasey, the Brush Electric Light Co., and several citizens of Cleveland, for valuable assistance in refitting the laboratories, and in replacing the library and the collections in geology, mineralogy, etc.

Meanwhile the reconstruction of the burned building was pushed as rapidly as possible. The trustees, with characteristic Western energy, ordered its reconstruction before the fire was entirely extinguished, and the contractor began work while some of the stones were still too hot to handle.

The building, as left by the fire, consisted of bare walls, badly