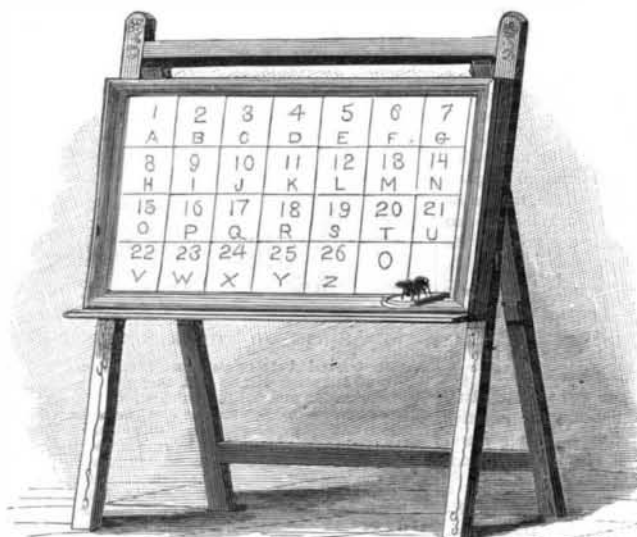


THE "EDUCATED FLY."

When the curtain rises a large mirror, in a gilt frame, is seen resting against an easel. The magician takes the mirror in its frame from the easel and rests it on the floor, showing both sides to the audience. He also removes the glass from the frame, rests the glass against the easel while he exhibits the frame to the audience. The frame has a solid wooden back. The mirror is about four and a half feet wide and three feet high, and after it has been inspected the magician replaces it in the frame. He now takes a piece of soap and marks the glass off into twenty-eight even squares, which he numbers from one to twenty-six and letters from A to Z; one of the remaining squares is zero and the other is left, as the prestidigitator says, for a starting point. He now takes a large fly from the table and places it on a little shelf which projects from the



THE BOARD FACING THE AUDIENCE.

empty square. He then asks that a letter or number be called. As soon as this is done, the fly is seen to travel across the mirror and stop at the desired square. This is repeated time and time again, the fly every time returning to the starting point.

The reason for having the mirror separate from its frame, and exhibiting it separately, is this: It will be remembered that the mirror is rested against the easel as the frame is shown, and that this frame has a wooden back. In addition to the wooden back it has a cloth back which is firmly fastened to the frame, and then comes the wooden back. This back is hinged to the frame at the bottom. Now, when the frame is placed on the easel and the mirror rested on the floor, the space behind the easel from the floor up is concealed by the mirror, and this gives an opportunity for a boy to get through a trap in the floor and pull down the back of the frame to make a shelf on which he sits. Of course, the cloth back is still in the frame, so the boy cannot be seen. The mirror is taken up and replaced in the frame, then it is marked off into squares as already mentioned. The black cloth is previously marked off into squares which exactly duplicate those which have been made on the face of the mirror. The fly is made of cork, with an iron core which is set flat against the glass. The boy behind the mirror is provided with a strong electromagnet attached to a wire running down the leg of the easel and under the stage to where it is connected to a powerful battery. He brings up the magnet and several feet of wire with him while the mirror is resting on the stage. When the boy hears the numbers called he applies his magnet to the corner where the fly is resting on the little shelf, and the magnetic attraction working through the glass draws it successively over the squares until it comes to the desired spot, which the boy can see on his chart, and of course the proper letter or figure is indicated where the fly stops.

The Communicability of Animal Disease to Man.

The fact that many diseases are, under certain circumstances, communicable from animals to man has now been for some time firmly established. Recent researches have tended further to elucidate the matter, although more conclusive evidence than has as yet been furnished will be required before the premises of some of the investigators will be accepted as finally solving all the doubtful points. The claim advanced by Koch of having established the unity of the tubercle bacillus in all animals has not met with universal credence. Other prominent scientific men hold views at variance with this contention. It has, however, been clearly shown that, given favoring conditions, the flesh of tuberculous cattle is contagious, and that the flesh of tuberculous swine is generally infective, owing to the greater susceptibility of the hog to general tuberculosis. But, putting on one side the probable danger resulting to man from the consumption of flesh infected with the tubercle bacilli, or from drinking the milk of a tuberculous cow, there still remain other bacterial diseases as well as various par-

asitic complaints which can be communicated by animals to the human being. With the exception of trichinosis and hydatid disease, the majority of these parasitic troubles are not especially dangerous to human life; nevertheless, they are one and all decidedly prejudicial to health, and it is in a high degree desirable that effective means should be taken to prevent their spread. The bureau of animal industry of the United States Department of Agriculture has just issued a bulletin on the inspection of meat for animal parasites, compiled by Ch. Wardell Stiles, Ph.D., in which the whole subject is treated exhaustively from both a theoretical and practical standpoint. The author states that "this report is primarily intended for the use of meat inspectors, as it is important that they should be well informed in regard to facts relating to the flukes and tapeworms which they are likely to find in the abattoirs and slaughter houses. A knowledge of these worms will enable inspectors to prevent the spread of their tapeworm stage among human beings by condemning the infested meat or subjecting it to processes which will render it harmless. The more important parasites in respect to diseases in man are those of beef measles, pork measles, and hydatids. Hydatid disease is at present comparatively rare in this country, and now is the time to attack it. By proper precautions at the abattoirs and slaughter houses, this dangerous parasite can be totally eradicated from the country. If these precautions are not carried out, it will only be a question of time when this country will take its place with Germany and Australia in regard to the number of lives sacrificed to a disease which has not yet gained much ground with us and can now be easily controlled." The preventive measures recommended by Dr. Stiles have already been referred to in a number of The Medical Record of a late date. The paragraphs, however, in connection with the disposition of condemned meats are worthy of notice. Three methods in particular are proposed: (1) Utilization as a fertilizer; (2) rendering the meats harmless by cold storage, cooking, or preserving, and then placing them on the market; (3) selling the meats under declaration of their character. Of these methods, the first, and the most radical one, will commend itself to the judgment of those interested in the health of the people at large. It has the advantage of being an absolutely safe method for the disposition of condemned meat, as there is no parasitic disease known which will withstand the degree of heat used at the large abattoirs in the preparation of fertilizers. In the other two methods the elements of chance enter too largely; probably cold storage, if prolonged for a sufficient length of time, will effectively answer the purpose; but, on the other hand, if not properly carried out, and particularly with the disease known as pork measles, the parasites of which live for a month or more, there will always be the possibility of spreading infection. These remarks apply with equal force to cooking and salting as a means of destroying certain parasites. As to selling infested meats under declaration, although the custom prevails in certain parts of Europe, it is contrary to all the laws of health, and should never be allowed to gain a foothold in this country. In all cases when meat is condemned by an expert inspector as infected with the parasites of trichinosis or hydatids, it should be subjected to the fertilizer process, and when this method is not available, should be consumed by fire. If these diseases are to be stamped out, half-and-half measures will not suffice; they must be eradicated root and branch. Doubtless the few will suffer in pocket, but it will be for the lasting good of the many.—Medical Record.

Farm Telephony in Michigan.

Michigan farmers are taking kindly to the telephone, and it is probably but a matter of a few years when the telephone will be as common in the country as it is in the cities now, says The Electrical World. In Allegan County the farmers have an exchange of their own, and they maintain it by annual assessments. The line runs from Holland, through Saugatuck, Ganges, Douglass, and Fennville to South Haven, and it is used chiefly during the fruit season to facilitate the handling of berries and peaches. About one hundred and thirty farmers and fruit growers built the line and maintain it, and the annual assessment upon each is about \$10.

Every township in Oceana County has telephone connections with Hart, the county seat, and this system is essentially a farmers' exchange, and is owned and maintained chiefly by the farmers and fruit growers. The Oceana County system, as also the Allegan County fruit growers' line, is being connected with a State exchange, and now the peach season is fairly open the farmers in both sections will be in easy talking range of the commission and railroad men here and the steamboat men at the lake ports.

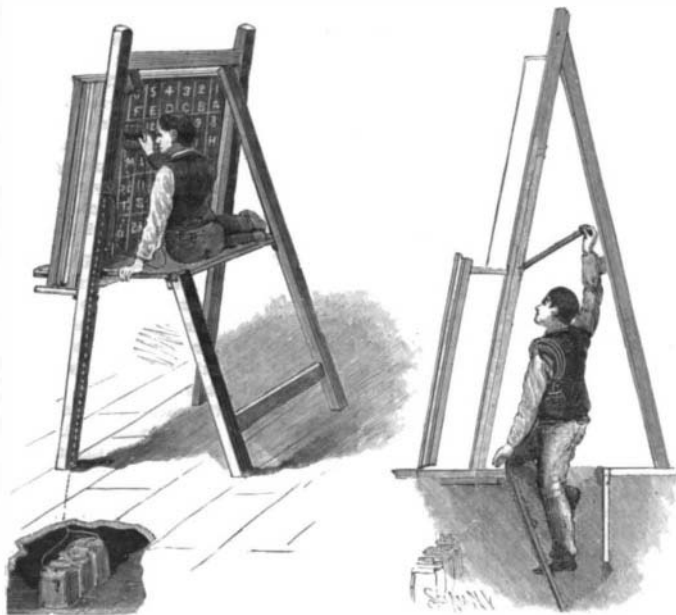
Gratiot County has another farmers' exchange which,

with Ithaca as the center, has connections with every township and many farmers. The system gives free service throughout the county to its subscribers and will soon be connected with the outer world. It is a great advantage to the farmers in marketing their products.

Farmers living near the cities are having the telephone wires extended out to them, though the movement is still in its infancy. The Citizens' Exchange in Grand Rapids has about a dozen farmers on its list, and that it has not a hundred or more is due to the rush of construction work in the city since the exchange was established. The first country telephone was to a farmer about a mile west of town. With direct connection with town, he could sell his stuff in advance, arrange for his deliveries, and easily keep his finger on market conditions. It gave him a big bulge upon the other farmers, and it did not take his neighbors long to find it out. The line now runs out about five miles, and all the substantial farmers along the line have hitched on. The farmers north and northeast of the city are clamoring for connection, and in another year they will probably be accommodated. The lettuce growers just south of the city all have connections, but they are so close to the city they are hardly called farmers.

The Current Supplement.

The current SUPPLEMENT, No. 1183, has a number of articles of more than usual interest. "Prince Bismarck's Career" is accompanied by an engraving of the splendid portrait of the great Chancellor by Fritz Werner. "The Armed Strength of Europe" is accompanied by full tables giving the number of officers and men in the active army, reserves, etc.; the tables also give the grand war total and the totals of the peace establishment. This information is often desired by our readers. "Some Interesting Rowing Experiments" describes the production of diagrams made with the aid of a special indicator to show the motion of the oar during the stroke, etc. The article is profusely illustrated with diagrams. "The Protection of Steam-Heated Surfaces" is a paper by C. L. Norton. "Statistics of the Railroads of the United States for the Year Ending June 30, 1897," gives the official figures of the railroad business of the United States for the past year, treating of mileage, equipment, capitalization, public service, earnings and expenses and railway accidents. The "Sardine Fishery" is a popular article showing how the little fish are cooked and canned. "Gentil's Mission to the Tchad" describes a trip into the heart of Africa. "The Expansion of Porcelain Body and Glaze" is an article dealing with some very interesting experiments in which physical principles are involved for the measurement of the coefficients of expansion. The observation de-



THE MYSTERY EXPLAINED.

pends upon the production of Newton's rings. "The Cultivation of the Grape-Vine" is a profusely illustrated article showing how this work is done abroad. "Glacial Geology in America," by Herman A. Fairchild, is an address before the Boston meeting of the American Association for the Advancement of Science.

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