

Four-fifths of the varieties of tomatoes now offered by dealers possess no points of superiority for general culture. It should be borne in mind that a variety which is simply good is not worth introducing. It must present some point of decided superiority over the best kinds at present known, in order to possess merit. This fact appears to be commonly overlooked in all classes of vegetables, and every year the grower is bewildered with the display of novelties.

HEALTH MATTERS.

IS MAN LEFT-LEGGED?—Dr. W. K. Sibley read a paper before the British Association in which he argued that man was naturally left-legged. Standing working with the right hand, there was a tendency to balance on the left leg. Race-paths were nearly always made for running in circles to the right, and the majority of movements (such as dancing, running, etc.) were more readily performed to the right. In walking it was natural to bear to the right: crowds as well as individuals did so. Troops started off with the left foot; the left foot was placed in the stirrup or step of the bicycle in mounting; the left foot was the one from which a man took off in jumping. The *Medical Record*, to which we are indebted for the above information, goes on to say, that, from measurements made by Dr. Garson of the skeletons of the two legs, in 54.3 per cent the left leg was the longer, and in 35.8 the right. From measurements of 200 pairs of feet, it was found that in 44 per cent the left, and in 21.5 the right, was longer, while in 34.5 they were equal.

THE STOMACH-BRUSH.—A dental journal publishes the following, translated from the German: In 1713 there was published a pamphlet entitled "A Complete Account of the most Useful Stomach Brush which is now to be had at the Brushmakers at the Old Court Sadler's Shop in Broad Street in Colln-on-the-Spree." Many a one may have wished to be able once in a while to have his stomach thoroughly cleaned out, and this speculative brush-maker gave a practicable means to give effect to this wish. In the pamphlet there is a drawing of the stomach-brush: it resembles a pipe-cleaner, but of course is larger. The stalk is made of four wires twisted together, covered with thread, silk, or small ribbons: it is twenty-six inches long. The brush at the under end is two inches long and one and a half broad, and is made of goat's-beard hair; but, when one has been accustomed to use it for three or four weeks, a horse-hair brush is substituted, this hair being somewhat stronger, and so the effect is better. The application of this most excellent brush is very simple. It is pressed through the throat down into the stomach, which, by drawing up and down of the brush, is cleaned. Thereafter cold water or brandy is to be drunk, and the operation is repeated till the cleaning is perfect. The cure is to be repeated every morning. The author says, according to the *British Medical Journal*, "At first you will find it rather troublesome to get the brush down, but when you put it in your mouth and on your palate, draw in breath and wind, and press it gently and gradually down, and, without any particular trouble, it will reach the stomach. After eight to fourteen days' practice, it will come as easily to you as eating or drinking." Of course, the daily application of the stomach-brush is the infallible remedy or preventive of all diseases that can be imagined. "Whoever uses this cure requires no other medicine, for it is good against all—cold, hot, and poisonous fevers, it gives a good appetite for eating, it is good against asthma, hemorrhage, headache, chest complaints, coughs, consumptions, apoplexy, toothache, sore eyes, dysentery, quinsy on the tongue, quinsy in the throat, ulcers, abscesses, cardiac: it favors digestion, strengthens the heart, drives away pimples on the skin, is against choking in the stomach, etc., makes too fat and asthmatical and swollen-up people thin, and, on the other hand, makes meagre and thin people fat. The great effect, however, is produced only when the use of the brush is combined with that of an elixir. This is compounded of aloes, saffron, rhubarb, lark-mushroom, wormseed, eugian, myrrh, theriac. After the stomach-washing, forty to fifty drops of the elixir is to be taken in wine, and this preserves for twenty-four hours against all poison and pestilence."

VACCINATION ON THE LEG.—A French practitioner, in the course of a large number of revaccinations, was struck with the fact that the operation was far more successful when performed on the leg than when the arm was selected. He has since availed himself of an opportunity of verifying his first impression; and last year, having to revaccinate 177 school-children, he chose the left leg in 99, and the left arm in 78, and carefully compared the results obtained, dividing them into three groups according as the eruption was typical, doubtful, or absent. Of the 99 cases vaccinated on the leg, as we learn from the *Medical Press and Circular*, 23 were typical, 31 doubtful, and 45 unsuccessful, being equivalent to a percentage of 23.2 and 31.3 respectively. Of the 78 children vaccinated on the arm, the numbers were 11 typical, 25 doubtful, and 42 failures, equal to 14.1 and 32 per cent respectively. The percentage of failures was 45.45 on the leg, as compared with 53.84 on the arm.

AFRICAN JUMPERS.—Dr. Bennett of Griqualand writes in the *South African Journal* an account of a peculiar nervous affection which is met with among the Griquas and other natives and individuals of mixed descent living in Griqualand. He suggests that perhaps the affection is similar to that prevalent among the French Canadians, and known there by the name of "jumpers." Dr. Bennett says, "The affection is entirely confined to the male sex, and I have never seen or heard of a case in the female. The victims of this strange form of neurosis go through the most extraordinary and grotesque antics on the slightest provocation. A whistle, a touch, a shout,—any thing, in fact, sudden and unexpected,—will 'set them going.' Some will stiffen their limbs, make hideous grimaces, and waltz about as if they had no joints in their body. Others will jump wildly about like dancing dervishes, imitating the particular sound that had acted as an exciting cause. Some, again, will make use of the most obscene expressions on a transient impulse, correcting themselves immediately afterward, and expressing their regret for having used such language; while others, on the spur of the moment, will do any thing they are told to do. If they should happen to have a piece of tobacco in their hand, and one should suddenly shout, 'Throw it away!' they will do so at once, running away for a short distance, and trembling all over their body. I remember one case in particular: it was that of a 'bastard' boy, a mason by trade. He had been handed a piece of tobacco, and the person who handed it to him shouted out suddenly, 'Throw it away: it is a snake!' He first danced about wildly for a short time, and then ran away as fast as he was able; but he had not gone far, when he fell down in a 'fit,' and it was some time before he recovered."

SMALL-POX.—Dr. Lewentaner of Constantinople, writing in the *Bulletin Général de Thérapeutique*, No. 32, 1889, speaks very encouragingly of the success attending an antiseptic method of treating this disease, which he tried in several cases. The advantages of this method of treatment are summed up by *The Medical Record* as follows: 1. All the children treated in this way recovered, although the ordinary mortality of the disease is forty per cent. 2. The duration of the disease was decidedly shortened, the period elapsing from the commencement of the eruption to the falling-off of the crusts being twelve or thirteen days. 3. The disease ran its entire course almost without fever. 4. The danger to those around the patient is greatly lessened. In Dr. Lewentaner's cases there were other children exposed, but, notwithstanding that they were not vaccinated, they did not contract the disease. 5. The simplicity of the method, as compared with the treatment by baths and cold applications, has much to recommend it. 6. Aesthetically, also, the antiseptic method of treatment offers great advantages, since it prevents absolutely all pitting.

HEREDITY OF ACQUIRED CHARACTERISTICS.—Professor William H. Brewer of Yale read a paper on the above subject at the recent meeting of the National Academy of Sciences in Philadelphia. He combats the view of Weissmann, who has published a volume in support of the proposition that characteristics acquired by individuals are not transmissible. Weissmann supports this proposition by experiments on mice, whose tails he cut off for successive generations, without inducing a tailless diathesis in their offspring. Brewer discussed four kinds of variation: 1. Variation

in size; 2. Variation caused by exercise, training, and education; 3. Variations due to disease; 4. Characters assumed as the result of accident or mutilation. It is well settled that abundance of food affects the development and size of the individual and of the offspring. All cattle-breeding proceeds on this postulate. A good example of the second class of variations is afforded by the evolution of the trotting horse, which began during the present century, and has proceeded so far as to produce a breed of horses which have actually lost the instinct to run, and trot even while they are young. Variations due to disease are equally powerful, but less susceptible of demonstration. An example is ringbone in horses, caused by accident to the individual, but transmitted to offspring. As regards heredity of mutilations, numerous instances are cited, among which were enumerated several cases of malformed fingers in offspring of parents whose fingers had been injured by accident. Conspicuous instances of sports developing into varieties are certain forms of merino-sheep, and sequoia-trees of a certain type of foliage. Professor Brooks, in discussing the paper, according to the abstract in *The Medical Record*, opposed Brewer's view, and said that adaptations of nature have been evolved for the good of the species, not for that of the individual: hence they are not ordinarily transmitted, and the inherited effect of the influence of environment bears no appreciable effect on the evolution of species. Thus the larva of worker and drone bees is protected by an envelope of silk all around, while that of the queen bee leaves the abdomen unprotected, for the obvious purpose of enabling the mature queen to sting her larval rival when the swarming season is over, thus sacrificing the individual for the good of the community. The generation of polymorphic hydroids is an instance where the functions of generation are not exercised by the working members of the group, so that instincts acquired by experience are not transmitted. The bodies of all animals are similar polymorphic aggregations of cells. The cells of the body which are exposed to external influences and vicissitudes are outside the line of succession in generation. Dr. H. C. Wood of Philadelphia also opposed Brewer's conclusions. He doubts whether there is such a thing as hereditary disease. It is not the disease, but the liability to disease, that is inherited; in other words, the lack of power of resistance to external irritation. Consumption, for instance, is caused by the presence of an organism, the bacillus. This bacillus is certainly not inherited. We all breathe it, but not all become consumptive. Persons who have not sufficient power of resistance are affected by disease. These persons have inherited a weak constitution, or their powers of resistance have been weakened. This is all the heredity there is about it.

NOTES AND NEWS.

THE recent great reduction in the price of aluminum, made possible by improved methods of production, will doubtless lead to its adoption, to the exclusion of other metals, in the manufacture of transits, compasses, field and opera glasses, hand-levels, etc. The fact that it takes a beautiful finish, has a low specific gravity, is easily worked, and is practically non-corrosive, makes it the ideal metal for such purposes.

— The properties of quicksand are thus described in the *Mechanical News*: "The difference between building-sand and true quicksand is most easily explained by comparing building-sand to road-metal, while the quicksand must be represented by fragments no larger than large buckshot, but shaped like very smooth potatoes. In a word, the quicksand is small and thoroughly water-worn, so that every fragment has been deprived of all its angles and fairly well polished. Its particles are very small as compared with those of the building-sand. The smaller the size and the more complete the rounding, the more nearly will the sand approach a liquid condition when it is moistened. The first glance at a fairly mounted sample of quicksand under a microscope is sufficient to show that the quickness of the sand is amply accounted for by the innumerable friction-wheels which the particles themselves furnish. Sharp or building sand, on the other hand, will show few round corners, many angles, corners, and a general condition like that of broken stone. Sea-sand is often unfit for building, even though perfectly deprived of its salt, the reason being that the particles

have been worn and polished till they have no more binding-power than so many cobblestones. It is well to remember that quicksand when dry, if very fine, shows the same properties as a liquid. In holding up the centres of large bridges, it is sometimes put into cylinders with a plunger on top of it. It will, when thus confined, hold up the load like a column of water. When it is desired to strike the centres, a plug is drawn out of the side of the cylinders, and the sand flows out like so much water. The advantage, of course, is that the sand does not need a packed piston, and does not leak out, though the work be prolonged for years. Quicksand, when dry and confined, forms an admirable foundation, and when wet can be loaded over its whole surface, and give a good support if side openings can be avoided.

— According to the Paris correspondent of London *Industries*, the Maussier process of manufacturing aluminum is coming to the front, for it is announced that one of the largest engineering firms has undertaken to work it on an extensive scale. The process, he continues, comprises three distinct periods and kinds of operations,—the desilification, the reduction, and the liquation. The desilification is effected by means of fluorine or fluoride of calcium at a high temperature in the presence of carbon. Lime, or the carbonates of potassium or sodium, may be added to facilitate the decomposition of the silicate. The reduction or expulsion of the oxygen is obtained by means of iron and manganese raised to incandescence in the presence of carbon. The liquation, the object of which is to separate the aluminum from the iron and the manganese, is effected by dropping the molten mass into carbon ingot moulds. These moulds are made of wood-charcoal. The aluminum so obtained is nearly pure.

— To add to the many obligations under which he has laid Cambridge University, Professor Sidgwick has offered to give £1,500 towards the completion of the new buildings urgently required for physiology, on condition that the work is undertaken forthwith. The Financial Board has accordingly recommended a scheme by which this can be effected. *Nature* adds, "The alliance between mental science and physiology which this gift represents is a bright feature of Cambridge studies at present."

— A novel and interesting application of science to art may now be seen at the Arts Exhibition, London, where Mrs. Watts Hughes shows specimens of what she calls "voice figures." As described in *Nature*, these are practically Chladni's figures produced in a viscid medium. Semi-fluid paste is spread on an elastic membrane stretched over the mouth of a receiver. A single note "steadily and accurately sung" into the receiver throws the paste into waves and curves. The patterns formed are either photographed immediately after production, or are transferred as water-color impressions while the membrane is still vibrating. Fanciful names, e.g., "wave," "line," "flower," "tree," "fern," are given to these. The effect, especially in transparencies, is very beautiful. Some of the forms would repay the study of physicists as well as of artists. The most interesting are perhaps the "daisy forms," in which we are told that "the number of petals increases as the pitch of the note which produces them rises." The apparatus employed is not exhibited, and the descriptive label is not very clear, but we understand that Mrs. Hughes would be most pleased to explain the matter to any one scientifically interested in it. Her address is 19 Barnsbury Park, N.

— The recently established Geological Survey of Arkansas, of which Dr. John C. Branner is director, has taken up its work with remarkable vigor and success. The first volume, containing the administrative report for 1888 and a report on the geology of western central Arkansas, was rapidly followed by the second, on the neo-zoic geology of south-western Arkansas, the body of which is the result of the joint work of the United States Geological Survey and of the Geological Survey of Arkansas. By this co-operation Professor Robert T. Hill was able to extend his studies on mesozoic geology over Arkansas, and the volume is chiefly taken up by his report. The third volume is a preliminary report upon a portion of the coal-regions of Arkansas, which will be followed by a fuller report later on, as topographical as well as geological work is still being carried on.