

SCIENCE AND SCHOOLS.

We have before us an abstract of a paper entitled the "Intervention of Physicians in Education," also a set of resolutions of the New York Academy of Sciences on the subject of "Physiological Education." The author of the essay, and likewise the member of the Academy at whose instance the committee which brought in the resolutions referred to was appointed, is Dr. Edward Seguin, of this city.

In his paper Dr. Seguin advocates the active intervention of the physician in the training of children, and he thinks that such intervention should result in the establishment of open air garden schools, and also in the physician becoming the "keeper of the balance of the vital forces of the children." "Vital force" is a rather unscientific term, for as indicating a force inherent in or wholly peculiar to living matter many of our foremost thinkers have entirely abandoned it. What Dr. Seguin doubtless means is that the physician should be called upon to study the mental and physical peculiarities of children and so determine for each child its study potential—a factor belonging possibly to the class of personal equations which enter into the astronomer's labors.

In the resolutions above noted, we get a glimpse of the detail of the proposed garden school in the suggestion that the public parks of the city be devoted to that purpose, and in order that the educational facilities of the parks may be extended to adults as well, it is proposed that these breathing places be stocked with "plants of economic and scientific interest."

We quote these views both to dissent from them and to use them as a convenient example of those mistaken efforts toward scientific progress which rather retard than promote real advancement. It is indubitably true that there exists abundant room for hygienic improvement in our schools. Buildings in many cases are unsuited for their purpose, ventilation is bad, the children are too frequently kept too closely confined, and the pernicious system of requiring studies to be accomplished outside of school hours still further trenches on that period of relaxation which is necessary for the maintenance of proper health in the growing and immature body. We mean to say that there is no lack of abuses in the modern school room, and perhaps to the physicians more than to any one else, the public looks for the amelioration. Hence when physicians proceed to advocate views as little defensible as those of Dr. Seguin, the circumstance is something to be regretted.

The idea of open air schools in the abstract is well enough; but when it comes to be applied to a great city, Dr. Seguin sees no way of so doing except by taking the public parks. A child is quite competent to express its opinion on a scheme which looks to the turning of its only play ground into a school room, and it is hardly necessary to say what that opinion would be. The trouble in this, and in all large cities, is that there are not half parks enough, that the majority of children find their play ground is the filth and mire of the streets, and that the very need of more such places where a breath of air not reeking with the effluvia of a dense population can be obtained, has much to do with the large death rate which obtains among the children every summer. Dr. Seguin might have read in recent daily journals column after column of complaints because one of the least frequented parks in the city was closed an hour or two too soon in the evening, and at the same time he might have discovered that not merely to children, but to the whole working community, nothing would be more distasteful than the conversion of even the smallest park into school rooms or resorts for botanically inclined scientists.

The suggestion relative to study of children by physicians is equally impracticable. In round numbers there are about 160,000 school children in this city, and 1,550 physicians, or say one physician to every 100 children. The number of physicians in New York compared to the total population is anything below the average ratio, as to every physician there are some 700 people. From this can be inferred about the average worth of a physician's practice in this city, and the consequent cost to the people of the extra burden imposed upon the profession by critical examination of school children—supposing even that the latter could be successfully done. We do not believe it possible that any such accurate records of a shifting population of 160,000 children could be kept, especially when these children belong to all grades and conditions of life, exist under an infinite variety of circumstances, and are constantly departing as their places are supplied by others.

Dr. Seguin falls into the common error of progressive reformers, of wanting to do too much for the people and in the wrong way. No one who knows him will for an instant doubt either his philanthropy or his ability, and therefore we all the more regret any such wanderings into devious paths as the above would indicate. We cannot establish academic groves in New York just yet, nor is Young America, precocious as he is, ready to give up ball and hoop for "plants of scientific and economic interest." Urge the school boards to protect their buildings properly from fire and the consequences of panic, doctor; see that they give the children honest air to breathe, and not dilute carbonic acid; fix the studies to suit the average minds of the youngsters, and don't load them with a library of books to carry home and study nights when they should be asleep. This will be good work. We are not yet sufficiently advanced for anything beyond.

A good dryer for paints is made by grinding or dissolving a small quantity of sugar of lead in linseed oil.

Experiment with the Jablochhoff Electric Candle.

The recent experiments with the Jablochhoff electric candle at the West India docks, Limehouse, London, were completely successful. A large tent had been erected covering an oblong space of 110 feet by 80 feet, in which four ordinary lamp-posts had been set up, each having a simple spherical globe of opal glass surrounding the disk in which the kaolin and carbon candles were fixed. The electricity was generated by a steam engine of two and a half horse power. When the connecting wires were placed in circuit, the four candles flashed out a brilliantly white light that was momentarily blinding, notwithstanding the opal globes that materially veiled the intensity of the glare. For some seconds there were noticeable flashes of intermittently bright light, owing possibly to deviations in the resistance of the kaolin before it became equally fused, then the candles continued to burn for a quarter of an hour with a steady and intensely white glow, like no other artificial white light. At a distance of twenty or thirty feet from the opal lamp, it was possible to decipher the minutest notes faintly traced with a hard-pointed pencil. When sixteen gas jets with powerful reflectors were lighted, and the electric candles were extinguished, the effect was marvelous. They seemed to shed but the faintest glimmer around, and it appeared as if yellow glass had been placed in the lamps, so "jaundiced" was the sickly hue they cast in comparison with the whiteness of the other light. The next stage was the illumination of a large warehouse with only three candles burnt in ordinary lamps with rough tin reflectors, and without any opal shades to soften the light. The glow of the incandescent kaolin was in this case so fierce that the people turned away from it like owls blinded by sunlight. The illumination, however, was perfect. Except where black shadows fell, sharply defined, from interposing beams and pillars, every corner of the warehouse was penetrated by light. One gentleman had brought with him a card of patterns in different textures and every conceivable tint. Placed where the rays from one of the lamps fell directly on them, the greens, blues, yellows, reds, purples, and even the most delicate tint of straw color, were as clearly distinguishable as in daylight. After this there was an experiment intended to show the possibility of unloading ships at night. One candle was placed in a common street lamp on the wharf, and one fixed in a handlamp, with a sufficient length of insulated wire to enable it to be carried about the various parts of the ship. On deck, in the hold, and from end to end of the vessel, this lamp was borne without the light flickering for a second. Wherever it was placed, every object for yards round about was clearly defined. At the same time the light on the wharf was so powerful and widely diffused that the labor of unloading the ship might have been carried on without difficulty.

Statues to Scientific Men.

An unusual interest is manifested in France at the present in regard to honoring her distinguished men of science by erecting statues to their memory. A statue to Arago is being erected at Perpignan, in the department of Orientales Pyrenees. Another to Nicephore Niepce, a name well known in connection with improvements in photography, will be erected at Chalons-sur-Saone, his native place, by public subscription, at the instance of the Municipal Council of the city. It is also stated that a public subscription will be opened at Lyons on behalf of Ampere, the inventor of the electro-magnet, and the precursor of Faraday in the invention of the inductive electricity. Ampere was born in that city in 1775, and his father was guillotined there on the Place des Terreaux for having been active in the great royalist rebellion against the Convention, which ended in the famous siege of Lyons and his capture by Dubois-Crance.

Is there a Resisting Medium in Space?

European astronomers are still wrestling with the problem. Is there a resisting medium in space? first suggested by the acceleration of Encke's Comet. Dr. Von Asten has just given the results of his investigation of eighteen passages of the comet from 1818 to 1875. He thinks that there can be no hesitation in affirming that a resisting medium is the cause of the acceleration, and that the dense part of the medium does not extend much beyond the orbit of Mercury. But in 1871, there happened to be no acceleration, and the only explanation of this Von Asten can offer is that a violent disturbance took place about the middle of June, 1869, and that this might have been caused by a collision with one of the undiscovered minor planets, whose orbits lie between Mars and Jupiter.

Exhibition of the Anthropological Society of Paris.

The Anthropological Society of Paris propose to give an exhibition in connection with the Paris Exhibition of 1878. The society has appointed a commission comprising the leading anthropologists of France, who have issued a programme which promises to be the most interesting and valuable exhibition of this kind ever displayed. The following are the classes under which the exhibition will be arranged: 1. Crania and bones, mummies and specimens relating to the comparative anatomy of the human race. 2. Instruments, methods of education. 3. Prehistoric and ethnological collections. 4. Photographs, paintings, and drawings, sculpture and modeling. 5. Geographical maps and tables relating to ethnology, prehistoric archæology, linguistic, demography, medical geography, etc. 6. Books, journals, brochures.

Danger in Vinegar.

There are more kinds of so-called vinegar in the market than brands of family flour. The New York *Tribune* thus alludes to one of them: The Board of Health of the District of Columbia has condemned five car loads of vinegar sent there from Chicago, on the ground that it is not a genuine article, and is injurious to health. An analysis of the so-called vinegar has been made. It appears, according to the report of the Board of Health, that the vinegar contains 54.54 grains per gallon of anhydrous sulphuric acid, combined with lime to form a sulphate of lime equivalent to 117.28 grains of gypsum per gallon, and besides that, 5 grains of free sulphuric acid per gallon. The Board also report that this sample was taken from an invoice of more than 1,000 barrels brought there to be sold as vinegar, and that it is likely to find a ready sale on account of its low price. The report concludes as follows: "When we think that oil of vitriol (sulphuric acid) can be bought at five cents per pound, and that a pound of said acid would render a barrel of fluid as acid as the strongest vinegar, the wonder will cease that it is sold cheap. This, therefore, is a fraud upon commerce, and a dangerous substitute for vinegar." The fraud and danger are more general than the great mass of people will readily believe. It is asserted that probably one half the vinegar sold at city groceries is a rank poison, with either sulphuric or other objectionable acids for its base, from which the acetic principle is evolved, the same as in the manufacture of aromatic vinegar or the acetates used in calico printing. Acetic acid is present in all vinegars, although they seldom contain more than five per cent of the absolute acid. Their color, flavor, and value depend materially upon the ingredients from which they are made. In England, honest vinegars are usually made of malt; in France, of grapes; in Germany, of grapes, beetroot, or potatoes; in this country, of apples and grapes.

Asparagus Paper.

A man of science, writing to the *Patrie*, explains what is the principal use to which the bundles of white stalks of asparagus, from which the tips have been bitten, may be put. They may be made into paper, and that not ordinary brown paper, or even foolscap, but letter paper of the finest description. It appears that in a few favored places there are manufactories where the asparagus ends are used in this way, and where the careful housekeeper hoards up the scraps with a diligence unknown elsewhere. But the work of collecting them is an up-hill task as yet, and it will be years before, in the natural order of things, the practice of saving them and packing them off to such factories for sale is at all generally adopted.

History of the Alphabet.

Rev. Isaac Taylor has read a paper before the Victoria Institute, London, on De Rouge's investigations of the history of the alphabet—the oldest achievement of human ingenuity. It passed through three stages—from pictures of things (ideograms) to symbols of words and syllables (phonograms) and lastly into letters. All the alphabets could be traced by means of the Moabite stone to the Egyptian hieroglyphics, and the successive changes were shown to be, in a great measure, owing to the necessities produced by the nature of the writing material, unwillingness to devote much time to the accurate reproduction of original forms, and the requirements of legibility.

Population of Russia and Turkey.

In a paper read recently by Mr. E. G. Ravenstein before the Statistical Society, London, on the populations of Russia and Turkey, he stated some facts of especial interest at present. Russia has a population of 84,584,482, while Turkey has only 25,286,868. The increase of the former is 1.1 per cent per annum, the Jews being the most prolific of the inhabitants; but in Turkey the author believes that the Turks proper do not increase at all, owing to the vicious habits of the women and the losses entailed in defending the empire. In Russia there are 100 Russians to every 50 of other nationalities, and 100 Christians to every 16 Mohammedans and pagans, while in Turkey there are only 100 Turks to every 197 of other inhabitants.

A VERY sensitive metallic thermometer on a new principle has been invented by an Italian optician in Paris. The dilations of a small sheet of platinized silver are amplified by means of a system of levers, and the motion is communicated to a needle on a dial, on which degrees are marked. The motion of the needle is almost instantaneous. The apparatus has been tested in the Ville de Paris, a new balloon sent up on June 3 at Paris.

CULTIVATE frogs, toads, and lizards. Put them in your gardens, and as the evening approaches they will hop from their hiding-places and snuggle down in some convenient spot near the gutter, or where they know their food will come plenty. The ants, roaches, mosquitoes, etc., they consume in a night is marvellous, and thus they keep down the insect pests.

THE Societies of Natural History, Geography, and Anthropology, in Madrid, have appointed a commission for the purpose of forming a Science Association, similar to those in England and the United States, to hold annual meetings in different parts of the kingdom for the investigation of scientific matters. This movement indicates a revolution in that country, more hopeful than any heretofore undertaken.