

SCIENCE.

FRIDAY, MAY 23, 1884.

COMMENT AND CRITICISM.

THE popular excitement as to food adulterations, and the difficulties met in dealing with this evil, lead to some queer results. The city of New York, with its vast population demanding supplies of cheap food, takes an extraordinary position as regards the two common articles of butter and milk. Instead of courageously undertaking the proper restriction and regulation of substitutes, and the prevention of fraud, the city authorities, through the board of health, now supported by the state legislature, propose to expel from the city markets all imitations of butter, and all skimmed milk. Oleomargarine and butterine have never competed with fine grades of butter. But, made in a healthy and clean manner, the substitutes have formed a legitimate, cheap, and palatable substitute for low grades of pure butter. Sold for what they are, a certain class prefer the imitations to poor butter, although genuine; but prohibition is to prevent this, and force up the prices of low-grade butter. Worse yet, is the exclusion of skim-milk from the city. One of the most wholesome and really valuable food-products, which, sold as skim-milk at a low price, would find a market almost unlimited, and prove a great blessing to the poor, is prohibited, and emptied in the gutter whenever found. The science of government must sadly need development, so long as it is thought necessary to thus cut off supplies of cheap and wholesome food from the poor of our great cities.

EVERY one remembers as one of the familiar, or perhaps better unfamiliar, sights of his school-days, a cabinet, — a closet with glass doors, containing a piece of quartz, a shell, a leg of a chair, and dust. Some one stirred by a love of nature, awakened for a moment by an essay at his teachers' convention, had

been misled into placing the glass-doored case in one corner of the schoolroom, and the quartz and shell behind the glass. So it had stood for a week or month admired, then for six months neglected, and finally for years despised, during which last period the chair-leg had been added to the contents.

It would seem that this ghost of a cabinet haunts the English schools as much as ours. Ghosts love half-neglected, half-forgotten corners, and are quickly banished by plenty of new paint, and a proper use of the broom. To put an end to the haunting school-cabinet, a remedy is suggested by Rev. Henry H. Higgins, who proposes that a loan-museum shall be formed for the supply of schools with a few specimens at a time in the departments which the scholars may be studying. As a loan-museum will have, like a circulating-library, a limit to the time a specimen may be retained, there will be no chance for the stagnation which now takes place. It is also hoped that the museum would be able to supply a much better class of specimens than the schools could afford.

Mr. Higgins differs from many advocates of object-lessons in thinking that it is better to place before scholars first, not the common things of their neighborhood which may have beauty, but a beauty overlooked because too near, but "would take the large and beautiful exotic shell, Pinna, with its byssus of glossy silk, and the fashionable-colored gloves made of this material, and, after operating with these, would require the class to bring a large cluster of common sea-mussels, and would make the children find the silk-byssus." His idea appears to be, that the advantage of a child's being interested in a novel sight is not to be thrown away by disappointing him with a toad, and then showing him that he does not know all about toads.

At the April meeting of the Royal astronomical society, Mr. Tupman announced that Dr. Arthur Auwers of Berlin had communicated to the society a paper on the chain of meridian distances, measured around the earth, between 1831 and 1836, in H. M. S. Beagle. Capt. Fitzroy was in command of the Beagle at that time, when she set out from Bahia, and went round the world, returning to that point. In working out the results, his selection of the chronometers upon which he based his determinations was somewhat arbitrary; and he found that the successive differences of longitude round the world, when added together, differed from twenty-four hours by thirty-four seconds. Capt. Fitzroy did not attempt to improve upon this; and the work has been left in that state until now, when Dr. Auwers has taken it up, and discussed anew all the chronometer-work on board the Beagle, using as the primary meridians those which have been correctly determined since, and correcting in this manner all the longitudes which resulted from the discussion of Capt. Fitzroy. Dr. Auwers's paper will be published in the *Monthly notices* of the society; and, as Fitzroy's longitudes have been to a great extent relied upon by the Hydrographic office in the construction of maritime charts, many of which are in use at the present day, the work of Dr. Auwers will be of great value in giving more accurate determinations of the longitude of distant islands than were before available.

WHEN one passes through some sleepy New-England village, and has pointed out to him a building as the academy at which his grandfather or great-uncle once learned his Latin grammar, he wonders how his uncle, now selling stocks on Wall Street, or pleading before the full bench in Washington, or hoeing corn in Kansas, and this quiet building, should have come together, and why they parted,—an academy, a square building, with hip-roof, a belfry in the centre, and coated with paint of that sobered tone derived of a mortgage. There are no little uncles running about the building now; the chief life, or it might be said

the soul, of the structure, existing in the records of the school (the newest quite yellow), the deed of the land, and an expired insurance-policy on the building,—a crumpled bundle of papers in the desk of the village doctor and only resident graduate, an enthusiast on the school, puffed with pride at his own success as a wiseacre.

Such is the dead or dying academy, of which each town can produce its sample. A few, a half-dozen, still flourish, thanks to a rather more liberal endowment, or the fortunate circumstance of a long run of successful masters. Just at present there are some stirring the old bones to find those that may show sufficient signs of life to warrant an attempt at resuscitation,—a revival of interest possibly due as much as any thing to the restlessness of human nature, not contented with the high-school system developed as far as may be for the present.

LETTERS TO THE EDITOR.

*** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

The faults of south-western Virginia.

WHILE engaged in making a series of cross-sections in the above region in 1880, I had very frequent opportunity to study the structure of the faults; and, as a result, I reached certain conclusions, which may be of interest.

A conspicuous feature, which is of general, if not universal, occurrence along the line of faults, wherever exposed, is an angular fold, as in fig. 1.

An excellent section, showing its manner of occurrence, is found at the mouth of Russel Creek, a tributary of Clinch River. It is given in fig. 2, where, at *a*, coal-measures occur nearly horizontal and undisturbed; at *b* the millstone grit is standing vertically, forming an obstruction to the creek, and giving rise to perhaps the loftiest and most picturesque fall in the region; *xy* is the fault-plane (seen in the vicinity), to the left of which the Knox limestone (*c*) shows a dip closely conforming to that of the fault-plane. Other examples might be given, but the above will sufficiently illustrate the general character.

At first I regarded them as a result of the faulting, produced by friction along the fault-plane; but further observation led me to the opinion that they preceded, and determined the location of, the faults. I was first led to this opinion by finding a fold, much like fig. 1, finely exposed in the line of a small fault at one end, where the displacement had diminished it little or nothing.

Other reasons for so thinking are, 1°, that, although of such general occurrence in connection with the faults as to suggest a very important relation between the two, they are not dependent on the faults, since

Science

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Science ns-3 (68), 613-614.
DOI: 10.1126/science.ns-3.68.613

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