SCIENCE.

FRIDAY, FEBRUARY 13, 1885.

COMMENT AND CRITICISM.

THE COMMITTEE on the government surveys having at this writing not yet made its report to congress, it may be worth while to consider a recommendation which touches upon the subject, made by the secretary of the navy in his last report, repeated indeed from former reports of the same official. It is to the effect that the work of the revenue marine, the lighthouse board, and the coast survey, so far as the latter is concerned with marine investigations, should be brought, with that of the hydrographic office, under the direction of the navy department, "whereby greater unity of purpose and consistency of action would be secured."

It can hardly be questioned that the change thus proposed might be economical in preventing the duplication of outfits, and that it might open much practical and profitable work to naval officers; but, apart from the better general scheme of the national academy, there is, perhaps, an element of difficulty in this plan, that might be used against it. The execution of certain technical parts of hydrographic work requires special skill; and, if the demand for this skill were supplied only by those who have made the navy their life-career, it might not be so well satisfied as if supplied from a larger circle. Moreover, the experience needed for the best performance of certain duties can be gained only by years of perseverance; and, when gained, the country cannot afford to lose it by its possessor being ordered off on a long cruise, as is at present the fashion in naval routine.

It may be seen that these disadvantages do not appear in the present organization of either the geological survey or the coast survey, for their recruits are drawn from all sources. They are not first asked, if, above every thing else, they are naval or military men, but rather if they are geologists or topographers; and, further, whoever gains successful experience in these services, gains also a relatively permanent occupation in his specialty. Perhaps it is in part for these reasons that the committee of the national academy did not include in its recommendations the suggestions found in the report of the secretary of the navy.

But all things considered, there seems to be sound reason in the policy of the secretary, "that the officers and seamen of the navy should be employed to perform all the work of the national government upon, or in direct connection with, the ocean." An arrangement by which the geodetic and geological surveys occupy themselves with our land possessions, while a bureau in the navy department determines what we need to know of the ocean and its shores, does not seem irrational. It would involve, of course, certain changes in the departments in the direction indicated by the possible element of difficulty above named. It is absolutely essential to the success of such a policy, that the scientific naval bureau which it requires, should not be, except in its subordinate offices, a training-school for naval officers. Its work must be directed, and for the greater part carried on, by men permanently employed for their special tasks, as is the case in the coast and geological surveys. Without this, there would be little gain of economy or uniformity, and matters would far better rest as they now are. If the change were made, there would be much outcry in certain quarters, and perhaps, for a time, some injustice hardly separable from so considerable a revolution; but these difficulties would be only of a personal and temporary nature, and not inherent in the case. Once accomplished, we should look back with wonder on the present strange order

of things in which our navy is intrusted with the exploration of the deeper seas and the mapping of far distant coasts, while it is held unfit to survey the shallower waters of our own shores.

There is probably no other subject in which practice lags so far behind knowledge as it does in the teaching of small children, and especially in country schools. The latest appliances in electrical apparatus are no sooner invented and tested, than they are brought into use, and supersede what were good appliances yesterday; but the antiquated way of teaching arithmetic and reading is still almost universal, in spite of its having been proved again and again that they can be taught by a scientific method in half the time. It was a witty Spaniard who said that the reason English-speaking people are so illogical, is that they have to learn to spell when they are young. The wonder daily grows that their instruction in arithmetic does not wholly destroy what residue of reason their spelling has left behind. A marked and much-needed change was brought about in England by the Association for the improvement of bread-making; and there is no doubt, that, by a vigorous associated effort, — by holding public meetings, by distributing pamphlets, and by all the usual means of agitation, — something might be done to awaken school-committee men and superintendents to some sense of responsibility. There is no better field for the missionary energy of those persons whose first interest is in the maimed and tortured of their own country.

Meantime the Society to encourage study at home could do no better work than to offer a course in pedagogics to primary-school teachers. The teachers of country schools are often intelligent, and eager to learn; but it would be asking too much to expect each one to discover for herself methods of teaching that have only been perfected by many generations of experience. To put them in the way of reading a few inspiring books on the subject would often be to work a transformation in them. This suggestion is made by the circular of information in regard to rural schools, recently sent out by the Bureau of education. That circular itself, if it were widely distributed, would do a great deal of good by means of the model lessons in arithmetic which it reprints from the report of the Massachusetts board of education. They must be in the nature of a revelation to most untrained teachers. It is a pity that the compiler of the circular could not find an equally good and explicit description of the modern art of teaching how to read.

LETTERS TO THE EDITOR.

The relation of form to time of maturity in esculent roots.

Many facts seem to indicate that a direct relation exists between the form of esculent roots and their time of maturity in the different varieties of the same species.

In the spring of 1883 a few typical roots of the 'long hollow crown' and 'Carter's new Maltese' parsnip were set out for seed in the garden of the New-York agricultural experiment-station, with other roots selected from each of these varieties, which were short and thick, approaching to napiform. As the flower-stalks developed, those from the short, thick roots in both of the varieties were considerably earlier in blooming than the longer typical roots. This unexpected event recalled the fact that the 'round' or 'turnip-rooted' parsnip is earlier in developing its root than the long varieties; also that in the 'Egyptian' and 'eclipse' beets, the earliest two varieties, and the 'French forcing' carrot, the earliest of its kind, the roots are shorter in proportion to their length than in other varieties.

Printed descriptions [1] from the most careful writers upon vegetables indicate that a similar relation exists in the onion and turnip. Thus in the onion the axial diameter in nineteen so-called varieties is noted as less than the transverse diameter. Of these, five are called 'very early,' five are called 'early,' seven 'half early,' one 'rather early,' and one 'rather late.' In seven so-called varieties, in which the axial diameter equals or exceeds the transverse diameter, five are called 'late,' one 'not early,' and one 'early.'

In addition to these, in which the dimensions are given in figures, the 'brown Teneriffe' is described as being 'very flat,' and, with one exception, is called 'earliest of all.' The 'intermediate red Wethersfield' is described as flattened, and the 'two bladed' as 'flat.' Both of these are called 'early.' The 'early white silver-skinned' onion is described as 'about the same diameter as the Nocera, but thicker' (through the axis), and is said to be 'a little less early than the Nocera.' The 'white Portugal' is noted as "a little less flat than the Nocera or 'early

[1] The descriptions examined are from Burr's Field and garden vegetables of America, and from Les plantes potagères of Vilmorin, Andrieux, et Cie.