

ric system, most druggists translate it into apothecary weight, and feel aggrieved that they are put to extra trouble thereby. If they had the weights, very many would use them sufficiently to become acquainted with their practical advantages, and thereby add their influence to the advancement of the reform. At present many who acknowledge the advantages of the metric weights, and would gladly see them used, do not have quite the energy required to actively push the change.

It is not understood by some that the object is to entirely supplant the present weights, not to make an addition to our stock. It seems very hard for them to realize that the particular set of arbitrary quantities, in which they happen to think, will in a few years pass into history along with cubits and sesterces, and be equally forgotten. It will be greatly to the advantage of all concerned to hasten this time as much as possible. Just now it seems as if the change was taking place rapidly in some of the mechanical arts; and the following quotation from the *Journal of Engineering Societies* is so apropos, that we add it as summing up the whole matter: "The Western architects prefer decimal subdivisions, because of greater ease in written operations, greater certainty and rapidity in mental operations with numbers of measure, decreased liability to error in figuring drawings (prescriptions), and a general saving of time and anxiety."

How well the above statement would apply to medicine and pharmacy! Simply let all teachers of pharmacy and materia medica agree to omit entirely all reference to the apothecary system of weights and measures, and adopt the law above stated, and the metric system will come into use, and the other die without a struggle.

WM. H. SEAMAN, M.D.

Howard Univ., Washington, April 3.

Platinum in British Columbia.

IN connection with the article on platinum in *Science* for March 29, it may be of interest to some of your readers to know that platinum is found in association with gold in placer deposits in a number of localities in British Columbia, and that the most important occurrence of that metal yet met with in North America, so far as I am aware, is that of the Tulameen and Upper Similkameen in that province.

In the "Mineral Resources of the United States for 1887," Mr. David T. Day states that in consequence of inquiries set on foot for crude platinum, a total quantity of 448 ounces was obtained in that year in the United States. Part of this amount was purchased in Oregon, and part is stated to have been derived from British Columbia. This latter portion, no doubt, came from the particular region to which allusion is here made; for, though found in other places in British Columbia, it is here only that the quantity has been such as to induce the miners to collect and market it. The total product of the Upper Similkameen and Tulameen district in 1887 is estimated at from 1,400 to 2,000 ounces, and in 1888 at 1,500 ounces.

Placer gold-mining has been carried on in an intermittent manner in the district in question for many years, the gold found being generally scaly or "fine," and being invariably accompanied by a certain quantity of similarly "fine" platinum. In 1885, however, "coarse" gold was discovered on Granite Creek, a tributary of the Tulameen, and in association with it similarly "coarse" platinum, in grains and pellets which are sometimes as large as a pea; the platinum in some "claims" being present in quantity equal to half that of the gold obtained, by weight. Since this discovery, the platinum, which was formerly thrown away, has been kept and sold separately, the price obtained averaging about three dollars an ounce.

As is usually the case, the platinum here found is alloyed with several other metals of the same series, and with copper and iron. The metals of the platinum series include osmiridium (in considerable quantity) with palladium, rhodium, and osmium to lesser amounts (according to analyses by Mr. G. C. Hoffmann, *Transactions of the Royal Society of Canada*, vol. v. sect. iii. p. 17; *Annual Report of the Geological Survey of Canada*, 1887, p. 5, T.).

During the summer of 1888, I had an opportunity of examining the localities of occurrence of platinum here described, and, without

entering into particulars, I may state that its association and distribution point very strongly to a mass of coarse intrusive diorite, which contains much magnetite in a disseminated form as well as in veins reticulating through it, as the source of the platinum. In consequence of the extreme rarity of this metal in its original matrix, this subject appears to be one of particular interest, and it is intended further to investigate it.

GEORGE M. DAWSON.

Geological Survey of Canada, Ottawa, April 5.

The Age of the Denver Formation.

I HAVE read with much interest the article in the April number of the *American Journal of Science and Arts*, by Mr. W. Cross, on a formation which occurs near Denver, Col., which he calls the "Denver formation." It appears to be stratigraphically distinct from the Laramie formation, from which it is separated by an intervening deposit, the Willow Creek bed. Paleontological evidence is available from three sources, — the plants, the *Mollusca*, and the *Vertebrata*. The plants according to Ward, and the *Mollusca* according to White, do not differ from those of the Laramie, and most of the *Vertebrata* have the same character. The formation has, on the other hand, yielded some fossils which have been referred to the mammalian genus *Bison*, and described and figured under the name of *B. alticornis* (*American Journal of Science and Arts*, 1887, p. 323) by Professor O. C. Marsh. On the strength of this determination, Professor Marsh identifies the horizon with the pliocene.

This was the first determination made in recent years. When subsequently dinosaurian bones were reported from these beds, a great deal of discussion was aroused, and the persistence of this mesozoic type of *Reptilia* into cænozoic time was proposed and maintained in some papers of a fugitive character.

Several years ago I had the opportunity of examining remains of *Vertebrata* from near Denver and Golden, and they were clearly dinosaurian, and of the types which belong to the Laramie system. How is it possible, then, that a species of *Bison*, a pliocene genus, could occur in the same bed? The explanation is as follows.

In 1875 I published an account of the *Dinosauria* obtained by me east of Denver, in the Laramie formation. They included three genera, — *Hadrosaurus*, and two new ones, *Cionodon* and *Polyonax*. Subsequently, in 1878, I described parts of the skeleton of a dinosaur from near the Judith River, Montana, which was furnished with robust horn-cores. All of these types were figured in the "Final Report and Bulletin of the United States Geological Survey of the Territories." Thinking that this horned reptile would be found to belong to one or other of the nine genera of *Dinosauria* already described by Leidy and myself from the Laramie, I refrained from naming it.

Material recently obtained and described by Professor Marsh goes to show that the horned dinosaurs belong to the genus *Polyonax*, Cope; and not only this, but that the *Bison alticornis* belongs to it also. That the latter species is not a mammal is indicated by the characters of the brain-case figured by Marsh.

Thus is removed the only obstacle to the reference of the Denver and Willow Creek formations to the Laramie system.

E. D. COPE.

Philadelphia, April 4.

Platinum in Place.

IN *Science* for March 29, p. 232, the finding of platinum *in place* is commented on. The following extract from Wurtz's "Dictionnaire de Chimie" (vol. ii. p. 1035) may be interesting: —

"Le platine a été trouvé en place par M. Boussingault dans les filons aurifères de Santa-Rosa de Osos en Colombie. Ce sont des filons de quartz hyalin et de limonite traversant une roche de syénite ou de diorite; en Sibérie, MM. G. Rose et Leplay ont toujours trouvé le platine dans les vallées ouvertes au milieu des roches serpentineuses."

Dana ("A System of Mineralogy," 5th edition, p. 11) says, "In Nischne Tagilsk, it [platinum] has been found with chromite in serpentine."

W. G. BROWN.

Washington and Lee Univ., Lexington, Va., April 3.