

Sorting Colored Wools when Blindfolded.

YOUR reviewer considers that the experiments of Professor Fontan, in which an hypnotic subject sorted colored wools with his fingers when his eyes were completely covered, are simply incredible. It is true that they are so hard to believe in, that a single instance can produce scarcely any effect at all; but they cannot be considered as absolutely incredible, in view of the fact that Prof. Vitus Graber has shown that so thick-skinned an animal as the cockroach re-acts to colors when his antennæ have been removed and his head has been covered with a thick coating of black sealing-wax.

M.

Classification of Soils.

IN the highly interesting summary of the forthcoming report of Director Powell, given in the issue of *Science* of Sept. 28, it is stated that in this report is announced a "new, scientific, and systematic classification of soils," a summary of which is then given.

Your correspondent is evidently unfamiliar with the standard and current literature of the subject. Director Powell simply adopts, for the purposes of geological field-work, a "working classification of soils," based upon their geological genesis. It is scientific and systematic, but certainly not new to any of those who have been concerned in such work, or have mapped its results from the standpoint of the geologist. Major Powell substitutes, perhaps wisely, the terms 'endogenous' and 'exogenous' for the more familiar ones of 'sedentary' and 'transported'; and instead of classing lacustrine and marine soils under 'alluvial' as a general head, he restricts the term 'alluvial' to those soils formed by *running* water only. I doubt the advisability of the latter change, unless we cease also to speak of lacustrine and marine alluvium, using some other term for the general idea of genesis by recent alluvion.

Major Powell also apparently proposes to replace the old term 'colluvial' by that of 'overplacement' soils. I doubt that even from the geological standpoint this is an improvement, for within this class must be placed the larger portion of the arable soils of hill-lands (there being no other within which they can regularly fall); and these certainly result more properly from 'colluvion'—i.e., a 'washing-together' and intermixture of the various materials on the slopes—than from what may properly be termed 'overplacement.'

As a schedule stated by himself to be merely tentative and for the purposes of field-work, and published only in an abstract made by a third party, Major Powell's classification is not yet a proper subject for extended comment. But it cannot but be a matter of congratulation that the subject of soils is now to receive close attention in the field-work of the survey, and will doubtless thereafter be subjected to such further elaboration as may be necessary to render the results available for agricultural practice.

E. W. HILGARD.

Berkeley, Cal., Oct. 5.

Recent Information from the Muir Glacier, Alaska.

IN my paper upon the Muir glacier, published in the *American Journal of Science* for January, 1887, I gave on pp. 11–12 a summary of the reasons for believing that the front of the glacier was retreating at a pretty rapid rate. Recent information confirms this view in a striking manner. I learn through Captain Hunter that upon June 27 last he established an observation station upon the glacier, and took accurate notes and measurements both then and in his recent trip in September, and found that during the three months of absence the glacier had broken off, and receded inland one-fourth of a mile. Whether this distance is regained by the forward motion in the winter or not, remains to be seen. Doubtless the captain can determine this when he returns next summer. According to my own observations during my prolonged visit in 1886, the central point of the glacier, where it meets the water of the inlet, remained nearly stationary, although great masses were repeatedly seen to break off from it, and sometimes it seemed during an interval of a few days to have receded perceptibly, while at other intervals it had regained its position. But from Captain Hunter's observations this season, it would seem that the waste consequent upon the formation of icebergs is greater than is supplied even

by the rapid motion of the glacier (from sixty-five to seventy-two feet per day), demonstrated by my observations to have existed a mile or two back from the front. Captain Hunter also reports that immediately in front of the ice his sounding-line ran out one hundred and six fathoms without reaching bottom; and, since the ice rises about four hundred feet above the water, there must here be a depth of more than a thousand feet of ice.

G. FREDERICK WRIGHT.

Oberlin, O., Oct. 11.

Chalchihuitl: A Note on the Jadeite Discussion.

IN his very valuable and interesting note on jadeite in *Science* of Oct. 5, Dr. Brinton called attention to the fact that Bernardino Sahagun had mentioned *iztac chalchihuitl* as being white chalchihuitl, fine green, and quite transparent, and also says that the white chalchihuitl was obtained from quarries in the vicinity of Tecalco, which he (Dr. Brinton) believes to be the modern Tecali. If such is the case, it is very evident that this is the so-called Mexican onyx, 'Tecali marble or onyx,' as it is sometimes called, which exists there in veins, being in reality an aragonite stalagmite. Great quantities of it were made into Mexican figures, ornaments, and beads, which are found all the way from northern Mexico down to Oaxaca. This so-called onyx is extensively quarried to this day, forming one of our richest ornamental stones.

The definition of *quetzal chalchihuitl*—"precious chalchihuitl, white, with much transparency, and with a slight greenish tinge, something like a jasper"—is somewhat contradictory, if it was intended for jadeite. A variety of green stones exist at present, and were used in considerable abundance in ancient Mexico. Among eight green stone objects which have been recently sent me as jadeite, four are jadeite, one is a laminated serpentine, another is a greenish quartz, and the other two are a mixture of white felspar and green hornblende.

In a string of beads there are four pieces of jadeite; but all the others were, as are the jadeite beads, in the form of rounded pebbles, drilled from both sides, and there are nearly a dozen different substances in this string. The fact that these jadeite beads were strung in with the others, apparently without any order except that they were graded to taper toward each end, points very strongly to the conclusion that they were found with the other pebbles in a brook, and, being of the correct size, had been drilled the same as the others, although very much greater in hardness. The question is, are these pebbles a part of the tribute mentioned in the Codex Mendoza referred to by Dr. Brinton? If so, they must have existed in some abundance; and they have not been reworked from other objects, as are the larger pieces, like the Costa Rican celts. Can it be that the large ones came from lower Mexico, and, after being used as implements, were traded off, but being green stones, which have been given the preference the world over by savages and barbarians, were made into votive objects? Among other green stones used by the ancient Mexicans are green jasper, green plasma, serpentine, as well as a fine-grained green shale and this Tecali marble, often of such a rich green that at a glance it could be mistaken for jadeite.

Dr. Brinton's theory that Vilalta (Zoochila), in the State of Oaxaca, is the possible home of large pieces of jadeite, if it exists in Mexico, is a good one, since some of the largest jadeite ornaments known, including the great sixteen-pound votive adze, were believed to have come from that district, and it was from a quantity of pebbles from one of the streams of this region that the writer identified yellow and blue sapphire almost as pure as the Ceylonese, being one of the only materials with which jadeite can be worked.

Dr. Meyer is quite right when he calls the *Nephritfrage* at present a chemical problem; for the mineralogist, by analysis and with the microscope, can readily distinguish the many substances of one kind or another that are sold as and called jade even by the Chinese, among which are jadeite (*feitsui*, or imperial jade), jade or nephrite, green aventurine, green plasma, light-green jasper, green hornblende, serpentine, agalmatolite artificially stained green, and in one instance even green-and-white glass, which last material was presented as jade by a Chinese official to an American lady.

GEORGE F. KUNZ.

New York, Oct. 15.