

There were persons who could place in the proper class, solutions containing one part of quinine in 500,000, and other substances in correspondingly high dilution, while some failed to detect solutions of more than three times the above strength. In how far this was due to education, we are unable to say. Among the men examined were many who have been accustomed to handling and recognizing drugs and medicines, and yet even these were frequently surpassed by female observers who had no such training.

In some previous experiments upon the sense of smell, of which an account appeared in *Nature* (*loc. cit.*), we noted almost as marked superiority on the part of male observers.

In a few cases, the ability to detect a dilute sweet was accompanied by a lack of ability to detect dilute bitters. This peculiarity was, however, far from being a general one.

As quinine is so largely used as a medicine, especially in the Western States, it was thought that its habitual use might dull the sense of taste for this particular substance. Among the observers subjected to our experiments, the use or disuse of quinine seemed to have had no especial influence.

The experiments just described suggested several interesting questions upon which we were unable to enter. How many, for instance, of these substances, taken of equal delicacy-strength, could be detected together in a mixture, in what order would they be detected, and by what portion of the tongue or organs of taste? Would all observers recognize them in the same order as to time? What would be the influence of the temperature of a solution tasted, upon the delicacy of the sense of taste?

As to the degree of accuracy with which our results give the average delicacy of the human sense of taste for the substances in question, we are led to believe from their substantial agreement with determinations based upon the previous set of experiments already alluded to, alike in the matter of absolute delicacy, of relative delicacy, for the various substances used, and of relative sensitiveness of male and female observers, that they are but slightly influenced by individual idiosyncrasies, and may be regarded as fairly representative.

E. H. S. BAILEY.
E. L. NICHOLS.

On New Facts relating to Eozoon Canadense.

IN the February number of the *Geological Magazine* there is an interesting article by Sir J. W. Dawson, 'On New Facts relating to Eozoon Canadense.' In paragraph 9, 'Continuity and Character of the Containing Deposits,' there are some remarks respecting the stratigraphy of the Archæan or older crystalline rocks of Canada upon which I wish to make a few comments.

The author does not indicate what are, in his opinion, "the extravagant statements" respecting the older crystalline rocks now being made," nor by whom they have been made. Neither does he state what portion of the Laurentian system is referred to under the term 'Middle Laurentian,' nor where he has recently examined it. I am not aware that Sir W. Logan ever used the term 'Middle Laurentian.' As regards the 'continuity of the great limestones' over certain areas, and their intimate association and interbedding with the gneisses, both orthite and anorthite, it has, so far as I know, never been questioned. In some cases, however, the limestones are very irregular, and occur in longish, more or less lenticular bands interleaved with the gneisses, often in such a manner as to suggest an origin posterior to that of the gneisses, or, rather, to that of the strata from which they have been produced. It is, I think, more than probable that original sedimentation of calcareous matter, and subsequent segregation, have both operated in producing the phenomena now observed in connection with these great limestone belts, the latter somewhat analogous to that which has produced the great 'quartz belts' in the Nova Scotia gold-fields.

I must entirely dissent from the views expressed by the author in correlating any of the so-called Upper Laurentian anorthosites of the vicinity of St. Jerome, or elsewhere, with the Huronian rocks west of Lake Superior. The massive anorthosites, as I have elsewhere stated, are clearly intrusive, and the surrounding gneisses and limestones do not pass beneath them; and there are no grounds whatever for regarding them as an unconformable Upper Laurentian

series. On p. 4, 'Report of Progress, Geological Survey of Canada' 1879-80,' I wrote, "If the foregoing determinations by Mr. Vennor, which are given in his own words, are correct, they seem very conclusively to prove, what I have already stated to be my opinion, that the labradorite or Norian rocks of Hunt do not constitute an Upper Laurentian formation, but occur in part as unstratified intrusive masses, and in part as interstratifications with the orthoclase gneisses, quartzites, and limestones of the Laurentian system." It is satisfactory to find that Sir William Dawson is now disposed to admit that the "great masses of labradorite may be intrusive;" but when these are eliminated, nothing remains of the Upper Laurentian as defined in any of these areas, from the Moisie River to St. Jerome; and unless the interstratified anorthite gneisses are made Upper Laurentian, the term, so far as the Norian or labradorite rocks of the areas named are concerned, must be abandoned, and I would reiterate what I wrote in 1884 ('Descriptive Sketch of the Physical Geography and Geology of Canada, 1884'):

"As regards the so-called Norian or Upper Laurentian formation, I have no hesitation in asserting that it has as such no existence in Canada, its theoretical birthplace. Wherever these Norian rocks have been observed, they are either intimately and conformably associated with the ordinary orthoclase and pyroxene gneisses, or they occur as intrusive masses when they present no gneissoid or bedded structure. They clearly cut the surrounding gneiss, and are probably due to volcanic or other igneous agency in the Laurentian age."

Considerable further investigation since the above was written has entirely supported the view then expressed.

ALFRED R. C. SELWYN.

Ottawa, March 13.

Queries.

30. POISONOUS JELLY-FISH. — Last summer, while bathing on the Maine coast, I had what was to me a novel and not very enjoyable experience. While swimming I happened by accident to kick some sort of an animal. For an instant the feeling that passed over my feet was like a slight electric shock. Of course, I turned to see what the animal was, and, from the glimpse which I had, I should call it a red jelly-fish. For three or four hours after, my feet were slightly inflamed and very painful, the feeling being like that caused by a burn. Afterwards I learned that a certain kind of jelly-fish was said by fishermen thereabouts to be poisonous. Can you tell me through your columns about this animal, what it is, and how it stings, shocks, or poisons? What is the remedy for its poisons?

Zoö.

Boston, Mass., Feb. 29.

Answers.

30. POISONOUS JELLY-FISH. — The above doubtless refers to the effects of our common large red jelly-fish (*Cyanea arctica*). Many jelly-fishes have the power of stinging soft-skinned animals, and in this way ordinarily kill and secure their prey; but there are only a few species that have nettling threads powerful enough or long enough to sting the human skin. On our New England coast the only ones that are able to sting thus are the *Cyanea*, referred to above, and the Portuguese man-of-war (*Physalia*); but the latter is not common, and is rarely, if ever, found on the shore north of Cape Cod. The *Cyanea* stings many persons very severely, especially if the tentacles come in contact with a tender part of the skin, as the face, lips, eyes, or between the fingers, and of course on any part of the body that is ordinarily covered; but in my experience they will not sting the palms of the hand. The sensation is much like that of the sting of a nettle ordinarily; but in some cases, or with some persons particularly sensitive to the poison, it results in numbness, swellings, and subsequent eruptions, and even ulcerations. The *Physalia* stings much more severely than *Cyanea*, and is able to cause temporary paralysis of the arm or leg; and in some experiments it has been found to act in such a way as to affect the heart: perhaps in a severe case it might even cause paralysis of the heart. The nature of the poison is unknown, but it must be very powerful, for the quantity is minute.

A. E. V.

New Haven, March 10.