

ing articles: 'The Ontario Coast Between Fairhaven and Sodias Bays,' by J. O. Martin. Some peculiar features of the landscape due to the rapid erosion of the glacial drumlins along the shore line are described. 'Eighth Session of the International Congress of Geologists, Paris, 1900,' is written up by Persifer Frazer. 'Two New Genera and Some New Species of Fossils from the Upper Paleozoic Rocks of Missouri,' by R. R. Rowley. Mr. Rowley describes two new genera of blastoids and proposes the names *Lophoblastus* and *Carpenteroblastus*, following which he describes two new species of the first, one of the second, and fourteen of the other genera of fossils from the same region. The article is accompanied by a plate. 'Ore Formation by Surface Decomposition,' is discussed by C. R. Keyes, in which he concludes "that with the exception of possibly a few isolated unimportant instances ore concentration does not generally take place through surface decomposition of rock masses, in areas such as the Ozark lead and zinc region." 'Gold and Other Minerals in Iowa,' by Samuel Calvin. The author undertakes to destroy the fallacious ideas that gold, gas or oil exist in paying quantities in Iowa. He also exposes the fallacy that any so-called geologist with a drilling outfit is to be trusted in his predictions to a public-spirited community.

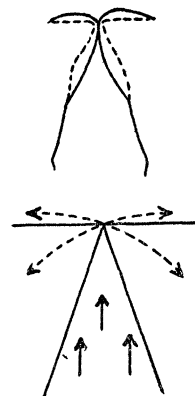
DISCUSSION AND CORRESPONDENCE.

THE LARYNX AS A MUSICAL INSTRUMENT.

THE wide prevalence of the mistaken notion that the vocal cords vibrate in the axial direction of the larynx makes it desirable to point out that observations by the laryngostroboscope—a combination of a laryngoscope and an adjustable intermittent source of illumination—have proved to the contrary for the male chest register. With this method it is possible to follow a vibration slowly through its phases. This has been done by Musehold, who reports that in singing in the chest register the cords touch along their whole length; that in loud tones the edges have a slightly rounded form, especially in the middle, indicating strong contact in the middle and weaker contact at the ends of the glottis; that in weaker tones the

line of contact appears even and thin while the top of the cord becomes flatter; that the edges of the cords move out sidewise and not in the axial direction of the larynx. Two of Musehold's diagrams are reproduced here. The upper one shows the bunching of the cord edges due to the firm contact; the lower one is an indication of the way the air pressure in the trachea presses the cords apart.

In connection with the remarks of Professor Le Conte on a previous occasion, it is interesting to note that with the same method Musehold was able to observe the lips of a performer on a horn, with the result of seeing that the lips vibrate as cushions and not in the direction of the axis of the horn.



In Professor Hallock's interesting communication in the last number of SCIENCE, the microscopic section of one of the cords is correctly given, but the diagram of the supposed way in which the muscle turns into a thin sheet is certainly incorrect. It is hardly the place here to give a summary of the facts in regard to the action of the vocal cords and the nature of the vowels in speech and song; I have stated in a previous communication that the proof is clear and complete that a vowel both in speech and song is not essentially a fundamental from the cords with a series of overtones reinforced by the vocal cavities. I may, perhaps, be pardoned for saying that I have given a digest of the many investigations on this and related subjects in a work on experimental phonetics now in press.

E. W. SCRIPTURE.

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