Anthropology (Vol. IV.), Prof. L. Moschen discusses the craniology of the Umbrians. Previous writers (Nicolucci, Calori, etc.) have asserted that the ancient Umbrians were slightly dolicocephalous or mixed. Moschen claims that there are no undoubted skulls of pure blood Umbrians of antiquity, and therefore that these older studies are of little or no value. He undertakes to study the true modern type, following the general terminology of Sergi. They present a large variety of skull forms, with a prevailing tendency to mesocephaly and leptorhiny. He divides his series into eight principal varieties or forms, the ovoids and ellipsoids predominating.

It is difficult to draw any racial conclusions from this study.

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NOTES ON INORGANIC CHEMISTRY.

THE question of impurities in atmospheric air is one that has been investigated by many chemists and from many standpoints, and one upon which much light has been thrown in recent years. One of the most important phases of this subject cannot be said to have yet approached a solution. That air in crowded rooms, and especially exhaled air, is poisonous is well known. The 'black hole of Calcutta' is but an extreme case of what we have all many times experienced in poorly ventilated audience rooms. These evil effects were early attributed to an excess of carbon dioxid, which was certainly present. When it was shown that carbon dioxid of itself is not a poison, a certain mysterious 'effluvium' in exhaled air was conjured up, but its nature eluded investigation. The reduced proportion of oxygen has also been considered a cause. None of these explanations, however, can be considered satisfactory. That the unpleasant effects of crowded rooms could be due to nitrites in the air has also been suggested, but never sufficiently investigated to give a satisfactory answer. A contribution to this phase of the subject has been made by Mr. George Defren at the Massachusetts Institute of Technology, and published in the *Technological Quarterly* (9: 238). His work was mainly confined to the determination of the quantity of nitrous acid (or nitrites) in the excellently ventilated rooms of the Institute Laboratory. After a brief summary of the work of previous investigators, Mr. Defren gives an account of his own experiments.

The method first used was to expose pure water in porcelain dishes for from one to nineteen hours, and then estimate the nitrites absorbed by Griess' reagent. In every case nitrates were found. The quantity was dependent on the time the water was exposed, and on the nature of the work being carried on in the room. The burning of illuminating gas seemed to occasion the formation of nitrites; whether this is due solely to the incomplete oxidation of the nitrogenous constituents of the gas, as Mr. Defren believes, or to a direct union of the nitrogen and oxygen of the air, may be an open question. The second method used was quantitative and consisted in drawing air into large bottles, adding water and analyzing after twelve or more hours. The amount found was small on clear days (as low as .014 part nitrous anhydrid in 10,000 parts air), but was increased by the burning of gas and the presence of the people in the rooms. The largest amount found was .07 parts in 10,000. Exhaled air was tested by blowing through water, but no trace of nitrites was found, contrary to expectation. Mr. Defren suggests that nitrites present would, by the large volume of oxygen present, be oxidized to nitrites, or even decomposed to nitrogen. A test showed that even air containing nitrites, when drawn through water, gave no reaction. On the other hand, water in

which the hands were washed showed a strong test for nitrites. It was also shown that the air was very thoroughly washed from nitrites during a heavy shower.

Mr. Defren's results seem conclusive as to the presence of nitrites in the air; that nitrites have a powerful effect upon the human organism is well known; whether the quantity in the air may become large enough, from lack of ventilation, to cause the well known symptoms of oppression, is a point left for further investigation. At all events Mr. Defren's work is a valuable contribution to the problem. A single criticism might be offered, that no account appears to be taken of the fact that nitrous acid, when in solution, is rapidly oxidized by hydrogen peroxid to nitric acid, and similarly ammonia is oxidized to nitrous acid. Wurster's work on this point seems not to be noticed, though the article (Ber. 19 : 3206) is mentioned in a foot note. This reaction might cause Mr. Defren's results to be too low for the amount of nitrous acid in the air, and would probably account for the apparent absence of nitrites in air exhaled through water.

Apropos of air analysis, Dr. T. L. Phipson communicates to the last *Chemical News* a unique method of removing the oxygen from the air. A graduated bell jar filled with air is placed over water. Suspended in the bell jar and not touching the water is a mushroom, *Agaricus atramentarius*. Exposed now to the sunlight, the mushroom rapidly and *quantitatively* absorbs the oxygen of the air, the carbon dioxid given off dissolving in the water, which rises in the bell jar one-fifth of the height. The mushroom itself dries up, becoming mummified in nitrogen. If now a green plant, as *Lysimachia nummularia*, be placed alongside the mushroom, the latter will recommence slowly to vegetate, living on the oxygen furnished by the green plant.

J. L. H.

SCIENTIFIC NOTES AND NEWS.

The details of the approaching meeting of the American Society of Naturalists can now be announced. After the business meeting, on the afternoon of Tuesday, December 29th, the 'Inheritance of Acquired Characteristics' will be discussed by Prof. C. S. Minot, Prof. J. M. Macfarlane, Prof. E. D. Cope and Prof. Wm. James. In the evening, at the Fogg Museum of Art, Harvard University, Cambridge, Mr. Alexander Agassiz will give a lecture, the subject of which will be announced later, and will afterwards hold a reception at his residence. At noon on Wednesday there will be a lecture by Prof. E. B. Wilson, on 'Recent Developments of the Cell Theory,' which will be followed by a luncheon, given by the President and Fellows of Harvard College. In the afternoon Mr. Agassiz will meet the Society in the Museum of Comparative Zoology and describe the Museum. The annual dinner of the Affiliated Societies will take place in the evening at the hotel Brunswick, at which an address will be given by the President, Prof. W. B. Scott.

As we have already stated, the ninth annual meeting of the Geological Society of America will be held at Washington on December 29th, 30th and 31st. The President, Prof. Joseph Le Conte, has chosen as the subject of his address 'The Different Kinds of Earth-crust Movements and their Causes.' Papers have been entered to be read by J. S. Diller, N. H. Darton, Frank Leverett, J. F. Kemp, C. Willard Hayes, Marius R. Campbell, J. B. Woodworth, C. H. Hitchcock, Robert Bell, J. W. Spencer, Ralph S. Tarr, H. L. Fairchild, Angelo Heilprin, George H. Barton, F. B. Taylor, Harry Fielding Reid, Bailey Willis, Warren Upham, Charles R. Keyes, J. E. Wolff, A. H. Brooks, Joseph F. James, Henry S. Williams, David White, Henry B. Kümmel, William M. Clark, T. W. Stanton, F. H. Knowlton, E. H. Barbour, G. Perry Grimsley, George P. Merrill, Alfred C. Lane, Arthur Keith and G. K. Gilbert.

We regard it as somewhat unfortunate that after meeting at the same place as the Naturalists last winter the Geologists should this year