

health officers and other sanitarians, weekly abstracts of the consular sanitary reports and other pertinent information received by him, and shall also, as far as he may be able, by means of voluntary coöperation of State and Territorial health authorities, and through them, municipal health authorities, public associations, and private persons, procure information relating to the climatic and other conditions affecting the public health.

SEC. 7. That a special report of the said commission of public health, relative to such action as will most effectually protect and promote the health of the people of the United States, may at any time be required by the President of the United States.

SEC. 8. That the commission shall co-operate with State, municipal, and local boards of health in establishing and maintaining an efficient and accurate system of notification of the existence and progress of contagious or infectious diseases, and of vital statistics in the United States.

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#### CURRENT NOTES ON ANTHROPOLOGY.

##### CAN SEX BE DISTINGUISHED IN SKULLS?

ENTHUSIASTIC osteologists frequently assert that they can distinguish the sex by an examination of the skull. It is possible, when one is familiar with many skulls, from the same stock and geographically limited to narrow bounds, that this can often be accomplished. But in general it is not possible. There is no sex-criterion in the skull.

In an inaugural dissertation, published in Berlin last year, and noticed in the *Centralblatt für Anthropologie*, January, 1898, Dr. Paul Bartels submitted the question to a new and searching examination, founded on 1,090 skulls—685 male and 405 female. He could discover no positive characteristic of sex. The fossa-typanico-stylo-mastoidea, of which much has been made, he shows to be inconclusive; and the same is true of every

other trait which has been advanced as a determination of sex.

#### THE EARLIEST ITALIANS.

ONE of the numbers of the 'Piccola Biblioteca delle Scienze Moderne,' published by the Brothers Bocca, at Turin, is a treatise by Professor Sergi on the earliest inhabitants of Italy (*Arii e Italici*, pp. 229, illustrated).

The author's theory may be briefly stated. The oldest tribes on the peninsula, the Pelasgians and Ligurians, belonged to the 'Mediterranean' stock, which at a remote date moved northward from equatorial Africa. The Aryans entered much later, coming from the north, and originally from Asia, bringing with them the Umbrian, Oscan and other Indo-European dialects. The Etruscans, of unknown affinities, but members of the 'Mediterranean' stock, entered by sea, on the west coast, about 800 B. C., arriving from the eastern Mediterranean shores.

The author bases most of his argument on cranial forms, but also discusses with some detail the archæologic evidence, and slightly that derived from language. It is unnecessary to point out how many obstacles present themselves to such a solution of this intricate question.

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#### NOTES ON INORGANIC CHEMISTRY.

THE *Chemical News* published two papers by Professor William Ramsay and Dr. Morris W. Travers before the Royal Society on January 20th. The first is on the homogeneity of helium. In a previous paper recently noticed in this column an account was given of an attempt to separate argon and helium into two portions of different densities, by diffusion through pipe clay. These experiments showed that while it did

not appear possible to thus separate argon into two gases there was more promise of success with helium. This experiment has now been carried out on a much larger scale with helium, and, while the gas is thus readily separated into a lighter and a denser portion, it is found that while the lighter portion is pure helium (density = 1.98), the denser portion is a mixture of helium with a small quantity of argon. The most careful experiments fail to show a trace of any new gas. It appears that every mineral which contains helium also contains a varying proportion of argon, with the exception of some cleveite from which argon is almost wholly absent. The gas from malacone, on the contrary, contains a larger proportion of argon than of helium. Professor Ramsay discusses the probability of the existence of a third gas, with an atomic weight of about 20, lying between helium —4 and argon —40. Such an element would correspond to the second element in each of the seven groups of the periodic system—chlorin, sulfur, phosphorus, etc. According to this view helium and argon would be respectively the first and third elements of the eighth group. It is true that argon has a higher atomic weight than the next following element, potassium of group first, but it is also true that cobalt appears to have a higher atomic weight than the following element, nickel, and tellurium than iodine. Professor Ramsay has hopes that the element with atomic weight 20 may yet be found among the gases evolved from some mineral and is continuing his search.

THE second paper mentioned is on Fergussonite—an endothermic mineral. This mineral is mainly a columbate of yttrium, with seven per cent. oxides of uranium. It also contains helium, and on heating to 500°–600° it suddenly becomes incandescent, evolving much of its helium, while its

density decreases. The evolution of heat for a gram of the mineral was found to be 809 calories. The explanation of these characteristics seems to be that the mineral is a true endothermic compound of helium. At least two other minerals, gadolinite and æschinite, exhibit endothermic properties, but they increase in density on ignition, the cause being possibly polymerization, and hence they cannot be classed with fergussonite. Only the æschinite contains helium, and that in very small quantity. Professor Ramsay suggests that possibly these minerals, containing the rare elements, represent a portion of the interior of our planet, and their formation a condition of our earth realized only before solidification set in. Under the enormous pressure obtaining at the center, combination with helium was an exothermic event. Such compounds, in some unexplained manner having come to the surface where they are no longer exposed to pressure, have in consequence become endothermic. “The frequency of the helium spectrum in the stars and its presence in the sun makes it less improbable that some such explanation may not lie far from the truth.”

It was noted last week that E. Sonstadt had shown that platinum tetrachloride is decomposed on boiling in very dilute solution, with the formation of platinum monochloride,  $\text{PtCl}$ . He now shows in an article in the *Chemical News* that auric chloride is similarly decomposed when heated in very dilute (1:15,000) solution, with the deposition of metallic gold. He supposes aurous chloride,  $\text{AuCl}$ , to be first formed analogous to the case with platinum, but this decomposes into metallic gold and auric chloride, hence only the metal is precipitate. Sonstadt considers that this is a general reaction for the higher chlorides of the metals of the platinum group.

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