in Limestone County. The samples analyzed by him contained from 15 to 20 per cent. of phosphoric acid up to 36 or 37 per cent.; and he also showed a sample of superphosphate prepared by him from this rock, the manufactured article containing 13.15 per cent. water—soluble, 0.15 per cent. reverted, and 1.24 per cent. insoluble; total 14.9 per cent. phosphate.

In the discussion which followed, Mr. Aldrich said that a fertilizer manufactory in Meridian was using lignite from the Burning Cut in Sumter County, Ala., as a filler, and that it contained 1.5 to 2.0 per cent. ammonia. Mr. Aldrich had formerly sold from the Blocton mines several hundred tons of coal slack, to a Shreveport company, for the same uses. He also mentioned the fact that he had recently examined a lignite occurring in Mississippi, 17 miles west of Starkville, which had only 4.5 per cent. of ash and which made a very good coke.

Dr. Smith then read a preliminary report of the mineral statistics of Alabama for the second and third quarters of the current year; after which, there being no other business before the meeting, it was adjourned *sine die*.

EUGENE A. SMITH,
Secretary.

DISCUSSION AND CORRESPONDENCE.

DR. WILSON'S REPLY TO HIS CRITICS.

I CONSIDER it complimentary to an author that his works should be criticised. It shows that they are worthy of attention and consideration. The friendly criticism in SCIENCE, December 22d, of my address delivered in Columbus last August, before the Section of Anthropology of the A. A. A. S., appears under such misapprehension as seems to require a word of explanation. That address, as its title indicates, was 'A History of the Beginnings of the Science of Prehistoric Archæology.' It was a *résumé* or description of the discoveries made, or alleged to have been made, which led to the foundation of the science, and a statement of the theories advanced for its establishment. This being its purpose, it was proper that I should treat of all its topics, and this without binding me to an approval of them. I was recording a history of the science, not necessarily maintaining the truth of all the theories advanced by its founders. The friend who wrote the criticism seems not to have recognized the difference. He makes strenuous opposition to the classifications of the science as set forth in my address; but none of them were mine. They had been made in Europe many years since, were applicable to that country, and most of them are still in use there. In such a history as I was writing it would have been highly objectionable for me to have omitted them; and so with most of the other points in the criticism referred to.

THOMAS WILSON.

NOTES ON INORGANIC CHEMISTRY.

AN important practical application of the liquefaction of hydrogen is that of the production of high vacua, as described by Dewar in the *Proceedings* of the Royal Society. At the boiling point of hydrogen the vapor tension of air is less than a millionth of an atmosphere, hence when to vacuum tubes for the spectroscopic examination of gases is attached a temporary tube immersed in liquid hydrogen, the solidification of the air in the tube produces a very high vacuum. In this way the more volatile constituents of atmosphere become concentrated in the tube, and in numerous tests the presence of neon and of helium was revealed in a volume of air less than 50 cc. Some tubes showed a hydrogen spectrum, but others did not, so that the question as to whether free hydrogen exists in the atmosphere cannot be considered as settled.

A LATER number of the *Proceedings* contains a paper by T. G. Bonney on the parent-rock of the South African diamonds. The 'blue ground' of the Newlands mines, which are forty miles northwest of Kimberley, contains rounded boulders of eclogite, and in this eclogite are occasional colorless octahedra of diamond, apparently as an original constituent. As the eclogite boulders are water-worn, it follows that the 'blue ground' is not of igneous origin, but it is true breccia produced by the destruction of various rocks, one of which—the eclogite—has contributed the diamonds to the mixture.

THE analysis of a sample of Egyptian porcelain from Memphis is published by Le Chatelier