

The results obtained by the two learned associates were so rapid and so unquestionable, that in 1872 their laboratory at the Hôtel-Dieu was declared to be an establishment of public utility.

A few weeks afterwards the Commissioner of the Budget of the National Assembly having paid a visit to the Hôtel-Dieu, inserted in his report a clause asking support for the then existing establishment, at the expense of the Government, and the extension of the system to other Paris hospitals. A sum of 32,000 francs was voted without opposition, and three laboratories were opened, one at La Pitié, the second at the Charité, and the third at the Clinical Hospital. The reports of the *Commission de Budget* were successively presented by M. Beulé, the ex-Minister of the Interior, and, after he had met his untimely death, by the present sub-Minister of Justice, M. Bardoux, who both of them asked for *frais de premier établissement*. A sum of 90,000 francs was voted, partly by the Versailles National Assembly and partly by the Municipal Council of Paris.

Dr. Liouville was appointed the chief of the Hôtel-Dieu Laboratory; Dr. Carnhill, an anatomist universally known by his researches on the diseases of the liver, was appointed the chief of the *La Charité* Laboratory.

In one of the first sittings of the last session the Municipal Council decided that a large pavilion on the northern part of the New Hôtel-Dieu, now building, should be reserved for the clinical laboratory. No money is to be spared in order to procure the most important instruments which can be designed for chemical or medico-physical observations, either in the way of galvanic batteries, microscopes, spectroscopes, &c. A clinical laboratory will also be established in the new hospital to be inaugurated at the end of next November, which will be one of the most extensive in Paris.

NOTE ON HÆMATITE INDIAN AXES FROM WEST VIRGINIA, U.S.A.

THROUGH the kindness of Horace Fisk, of Trenton, and Major Jed. Hotchkiss, of Staunton, Va., I have been able to procure two specimens of hæmatite iron ore hatchets, of aboriginal manufacture. They possess great interest from the fact of being very similar to native copper axes, characteristic of the "finds" of relics of "mound builders." The specimens, one of which is here figured, have unquestionably been hammered out cold, and shaped from a fragment of the ore, without the aid of fire in previously refining the mass. The specimen figured measures five inches and a quarter in length, by three inches in breadth at the cutting end. The opposite end is square, nearly two inches in width, and somewhat thinner than the broader portion of the implement, which is nowhere of greater thickness than one-fourth of an inch.

The entire surface still shows the hammer marks made in shaping the hatchet, even to the edge, which now shows no trace of grinding or polish; but this may have been obliterated by the rust; but I am inclined to believe from close inspection of both specimens, that the edge originally was a hammered one, and not a ground one; making the specimen more nearly allied to the "clipped" jasper hatchets than polished (ground) porphyry axes.

The accompanying specimen is four-and-a-half inches in length, by two in breadth, is nearly uniform in thickness about three-sixteenths of an inch, and has a well-defined edge, which from its slightly wavy outline, and slight variation in width, I believe to be a hammered, and not a ground or polished edge.

Two other specimens, similar to these, were found with them, and are now in the calimat of Major Hotchkiss, who informs me that the series of four were found under an uprooted tree, on an Indian trail, at the Forks of Kelley's and Rich Creek, Gauley Mt., Tayette Co., West Va.

It has been suggested that the use of hæmatite for paint among our Indians may have led to its employment for other purposes ("Flint Chips," by E. T. Stevens, p. 553), and this is no doubt true, inasmuch as small irregular fragments of this mineral were often utilised, if the shape would at all permit, as arrow heads. Among the thousands of arrow-heads gathered in New Jersey, I have not met with one of iron ore that has been worked into any of the various patterns of flint points; but from graves, associated with others, I have found fragments of the ore, and once, of native copper, of such shape and size, and so placed, that they were evidently arrow-heads.



A curious form of "relic," known here as a "plummet," occasionally occurs, made of iron-ore. One such is figured in the "American Naturalist," vol. vi., p. 643, Fig. 132. This specimen "is made of iron ore, ground down and polished until it is almost as smooth as glass." As such plummetts are found in the western mounds, as well as on the surface of the ground throughout the Atlantic coast States, and are always polished, it seems fair to presume that a cutting instrument of such hard material would undoubtedly be polished and ground, if, at the time of its manufacture, grinding was known or practised among the aborigines in fashioning their various weapons and instruments.

When we consider that these iron hatchets were found in a locality once thickly populated by Indians, and probably frequently visited, if not occupied, by the mound-builders, and now yield, on search, an abundance of ordinary stone implements of every grade of workmanship and variety of pattern, it seems at least probable that the specimens in question were not fashioned at a time when the polishing and grinding of weapons was customary, but earlier, as the labour of beating so hard a material into its present shape would doubtless be supplemented by polishing, if the additional value given to an implement by the operation had been recognised.

As the writer has already endeavoured to show, through an extensive series of New Jersey specimens (NATURE, vol. xi., p. 215), that the ruder chipped implements of "our native rocks" are older than the more elaborate jasper and porphyry specimens, so I consider these hammered iron hatchets to be of an earlier age than either the polished iron plummetts of the mound-builders, or ground axes of the Indians.

CHARLES C. ABBOTT

Trenton, New Jersey, U.S.A.