

discussed. While from their general position, I have an opinion as to their age, I have given them too little attention to make it worth while to express that opinion in print. I venture the suggestion, however, that the 'brick clays' may be of various ages. Some of the clays used for brick about Philadelphia (whether 'Philadelphia brick clays' or not is another question) are at low altitudes, and are *younger than the Trenton gravels*, since they overlie them. Others are at much greater altitudes, and are presumptively of different, perhaps very different age. When our work in New Jersey is complete I shall attempt to make as careful a correlation of the various formations, and of their various phases, as the facts at hand shall warrant. Until that time, inferences based on annual reports, which are confessedly 'reports of progress,' are liable to be misleading. Possibly it would be as well not to make them.

Prof. Wright is good enough to refer to the conclusions which I have reached, as a "distinct advance." I, however, do not see any reason to think that my final conclusions are likely to be antagonistic in any important sense to the opinions which I have heretofore held, opinions which are in general harmony with those of Prof. Chamberlin, whose name is brought into the article in question. The most important modification of my own views which has yet taken place is the reference of a larger portion (than formerly) of the Jamesburg to the 'low-level' (younger) division.

I am not personally qualified to speak concerning the Conewango and Allegheny terraces, to which allusion is made; but, if I understand the matter correctly, there has been no abandonment by Prof. Chamberlin and his collaborators of any essential position relative to the phenomena along the Allegheny River. On the contrary, I have been under the impression, all along, that the detailed study of the region had tended to confirm the essential correctness of the position taken by Prof. Chamberlin long ago.

ROLLIN D. SALISBURY.

UNIVERSITY OF CHICAGO, March 9, 1896.

PRIMITIVE HABITATIONS IN OHIO.

In a recent discussion between two ethnolo-

gists it was advocated that all tribes living in timbered sections constructed houses of logs, bark or saplings, and that the tepee or skin lodge proper was characteristic of the plains. At Oregonia and Fort Ancient, two points in the Little Miami Valley, in Ohio, are large village sites upon which the sunken depressions marking lodge sites are still discernable. One of these areas has been under cultivation; the other is in its natural state. Some of the depressions are circular (the deeper ones), while the others are irregular. Ashes, charcoal, pottery, bones and implements are found in them to a depth of two or three feet, indicating a considerable excavation for the fireplace of each home. Those which are circular may have assumed such shape by natural agencies, as the wash of the soil into the deepest part of the excavation.

A number of the irregular sites were excavated. While the greatest quantity of refuse was found in the center, yet the debris extended on all sides for a distance of 12 or 15 feet. The site itself would vary from 20 by 25 to 30 by 45 feet, and frequently the ashes, pottery and bones were six or seven inches deep near the outer edge.

No modern relics have been found on either of these spots, although a careful examination (covering many months) was made of each. From the excavations it would appear that the habitations were permanent. At one point, considerably below the surface, remains of small (ends) logs eight inches in diameter were found, but it was hard to determine the character of the habitation.

I am of the opinion that most of the houses were of logs, coated with clay, thus forming 'clay domes' after the fashion of the Mandans. My theory is based upon these facts: The depressions, their extent and character; the fact that the first plowing of the southern part of Fort Ancient revealed circular embankments a few inches high, also irregular and slightly raised masses of reddish clay. When the lodge decayed and fell the upper portion would naturally fall into the entire space enclosed. As the walls immediately above the base were thick, when they fell the circular ring was formed.

The farmers also stated that the clay in these

circles was in chunks and hard as if sun-dried or slightly baked.

WARREN K. MOOREHEAD.

QUESTIONS REGARDING HABITS AND INSTINCT.

FOR purpose of extended comparison we wish data as to habits, instincts or intelligence in animals, above all, minor and trifling ones not in the books, *useless or detrimental* ones, and the particular *breed, species or genus* showing each. Examples; Purrings licking; washing face; kneading objects with forepaws, humping back, and worrying captured prey (like the cat); baying at moon (or otherwise); urination and defecation habits (eating, covering up, etc.); disposition of feces and shells in nest; rolling on carrion; cackling (or other disturbance) after laying; eating 'afterbirth' or young; sexual habits; transporting eggs or young; nest-sharing; hunting—partnerships, or similar intelligent associations; hereditary transmission of peculiar traits; rearing young of other species with resulting modification of instinct; feigning death; suicide; 'fascination' and any others. Circular of information will be sent and full credit given for data used, or sender's name will be confidential, as preferred. Answer as fully as possible, always stating age, sex, place, date (or season), species, breed, and whether personally observed.

G. STANLEY HALL.

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NEWLY HATCHED CHICKENS INSTINCTIVELY
DRINK.

EDITOR OF SCIENCE: In your issue of March 6, 1896, appears an excellent and accurate note by Wesley Mills, calling attention to an error of statement made by Prof. Morgan in SCIENCE (issue of February 14, 1896).

With due deference to 'The Writer of the Note,' who follows Mr. Mills, and who says that Morgan's argument is satisfactory—that "a chick might die of thirst in the presence of water," I desire to say that this is not my understanding of the case. I have been, during the last thirty-five years, a breeder of fowls as an amateur, and I have given the hatching and rearing of chickens close and continued attention.

I have repeatedly placed a shallow water dish before the bars of a coop in which a newly hatched brood had been placed the day previous, taken there directly from the hatching nest, and in which they never had food or water offered. Repeatedly, before these small chickens, not twenty-four hours from the shell, and before they had been offered food, I have filled their shallow water tray, and observed them toddle out to it, peck at it, or at once thrust their bills into it, *to drink at once by uplifting their heads*, as all adult fowls do, the hen never putting her head out from the bars, or showing these young chicks how to do what they instinctively did. I have made the same experiments repeatedly with food, with the same result, *i. e.*, that chicks instinctively drink and eat without any example being set by the mother hen.

HENRY W. ELLIOTT.

LAKEWOOD, OHIO, March 11, 1896.

SCIENTIFIC LITERATURE.

Moderne Völkerkunde, deren Entwicklung und Aufgaben. By THOMAS ACHELIS. 1 vol., 8°, pp. 487. Stuttgart, Ferdinand Encke. 1896.

The author of this work is a 'doctor juris' in Bremen, and the writer of several treatises on the development of the modern science of ethnology, properly so called. In the present volume he proposes to define the true aims of that branch of research by an investigation in the first place of its historical development; secondly, of its contents; and thirdly, of its relations to other departments of knowledge.

He expressly states that the words 'Völkerkunde' and 'Ethnologie' mean one and the same science (p. 300), the aim of which is 'to set forth the development of mankind in its different branches and their various stages of culture, and thus obtain, as nearly as possible, a correct picture of a complete and organic whole.' These stages of culture must be regarded as the constituent elements of a continuous mental process or growth, and thus reveal the unfolding of the universal human consciousness.

In this manner, ethnology leads up to philosophy, which thus enters into the category of the inductive sciences, and wins for itself a sub-