ticularly true in the case of the familiar, but little studied, "horned toad," *Phrynosoma cornutum,* and undoubtedly many "pairs" which have been shipped north by well meaning collectors have been of the same sex.

In making a study of the stomach contents of Phrynosomas, I have had occasion to open some two hundred specimens, trying always to find some connection between external characters and sex. The problem very quickly was solved; and I can affirm, that for this region at least, and during the spring months, the crescent markings on the back of the female are much brighter yellow than those of the male. The difference is very marked, and little or no practise is required to enable one to distinguish the sexes, even without comparison of specimens.

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CAHOKIA OR MONKS MOUND NOT OF ARTIFICIAL ORIGIN

A study of the materials composing the so-called Monks or Cahokia Mound, in Madison county, Ill., establishes, beyond doubt, that it is not of artificial origin, as has been so generally held but that it is a remnant remaining after the erosion of the alluvial deposits, which at one time filled the valley of the Mississippi, in the locality known as the "Great American Bottoms."

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SCIENTIFIC BOOKS

Geology of the Yang-tze Valley (China). By Yamajiro Ishii. Bulletin of the Imperial Geological Survey of Japan, Vol. 23, No. 2, Tokyo, 1913, pp. 19 + 157.

There are but few inhabited and easily accessible parts of the globe about which there is a smaller fund of geological knowledge than China. For that reason it is gratifying to note that papers on Chinese geology are appearing with increasing frequency. On the other hand, it is regrettable that some of these do not possess either the practical utility or the scientific accuracy that is always needed.

Since it is printed in the Japanese language and characters, Mr. Ishii's paper on the Yang-tze Valley will be of little use to nearly all geologists outside of Japan and China. This applies not only to the text, but also to the titles of maps and diagrams. Although there may be some compelling reasons unknown to the reviewer, such as popular demands in Japan, it would be hard to defend on general grounds, the printing of technical scientific papers in any language which is not in more or less general use in the scientific world. Only a geologist can read a technical geologic paper with full understanding and appreciation. Nearly all educated Japanese and Chinese read English, if not also French or German, so that even a paper intended largely for local use in Japan would be quite as intelligible to its readers if presented in one of the more important European languages and it would at the same time be available for foreign students in general. A popular summary in Japanese might be appended for the edification of the few who read only the mother tongue. It is greatly to be hoped that the future tendency in Japan will be away from the practise exemplified in this bulletin.

In the English summary of 19 pages at the beginning of the bulletin, there is an interesting account of the origin of the name Yang-tze-Kiang. This is followed by paragraphs on "Hydrography," and "Mountains and Plains." Under the heading of "Geology," the following table of stratigraphic divisions is given: (*a*) Quaternary, (*b*) Red Sandstone formation, (*c*) Coal-bearing Sandstone formation, (*d*) Great Limestone formation, (*e*) Sinic or Metamorphic formation, (*f*) Gneiss formation, (*g*) Plutonic rocks, (*h*) Volcanic rocks. The reviewer is obliged to agree with the author's admission (on page 16) that "our classification of the strata in Yang-tze Valley into the Quaternary, red-sandstone formation, coal-bearing formation, etc., as given above, is not the proper method of classification, because the geological age of each member is so indefinite that one formation may represent older Paleo-

zoic and middle Mesozoic." He would suggest that a much better classification could have been devised by a more careful study of the reports of earlier geological expeditions in China, which have evidently furnished a large proportion of the material embodied in Mr. Ishii's paper.

The author regards the well-known red beds of Sze-chwan as either Cretaceous or Tertiary and believes that they were deposited in a salt lake or inland sea. The "Coal-bearing Sandstone Formation appears to include rocks of widely different age, such as the Permo-Carboniferous coal-bearing beds described by the Carnegie Expedition of 1903–04 and the Rhaetic-Lias of Richthofen and Loczy. There is probably little more than a lithologic resemblance between these two series. In his description of the Paleozoic limestones, the author adds but little to that which is already known and, on the other hand, confuses much that has already been published. He refers to the Cambro-Ordovician limestones described by the Carnegie Institution as a "metamorphic limestone" and implies that its thickness can not be measured. These are surprising errors in view of the reported fact that along the Yang-tze gorges the limestone is almost entirely unaltered, fossiliferous, and only gently folded; and the thickness was measured ten years ago as well as the very small amount of time devoted to the act would permit. The very fact that a generous collection of well-preserved fossils has already been taken from these rocks is sufficient evidence that the alteration of these strata is not everywhere severe. One finds no mention in these pages of the interesting change in metamorphism of the Paleozoic rocks from the Yang-tze River itself, where the beds are merely consolidated, northward into southern Shensi, where they are schistose. Nor are the Cambrian glacial beds of Nan-tou, which have attracted wide attention among geologists, given even passing mention. Perhaps these points are discussed in that portion of the paper which is a sealed book to the occidental reader.

The author's interpretation of the geologic structure and history of central China will hardly commend itself to other students of the region. He apparently regards the Yang-tse basin as originally a great depression in a granitic foundation, enclosing a great lake or inland sea. This was gradually filled by successive layers of Paleozoic and Mesozoic rocks so that it dwindled in Cretaceous or Tertiary times to small remnants in the neighborhood of central Sze-chwan and the Tung-ting lake. Some time after the Paleozoic, the mountain ranges were produced by horizontal pressure which developed the folds and many minor basins. The author appears to hold the opinion that the last of the inland seas overflowed their rims and that these outlet rivers cut the magnificent gorges of the Yang-tze and its tributaries. Whether or not the author has given any consideration to the other published explanations of the phenomena must remain unknown to a reviewer who is unable to read the Japanese text.

A perusal of the English summary suggests that the material for the bulletin has been derived largely from a somewhat hasty or ill-considered examination of the reports of foreign geologists who have previously made explorations in China, interpreted in the light of the author's own field work. That the author was adequately prepared for his important task by sound and thorough training in school and field under competent guidance is not indicated by the available results. One of the most commendable characteristics of the paper is, nevertheless, the distinction which is generally made between inferences and facts,—a virtue which not a few occidental writers on geology might imitate to advantage. It is suggested that a more appropriate title for Mr. Ishii's paper would be "A Preliminary Geologic Sketch of the Geology of the Yang-tze Valley." Before the geologic features of so great and complex an area will have been described with even comparative thoroughness, the product will require many large volumes rather than a small pamphlet.

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