facts as such, but rather the cultivation of an ability to discriminate between the essential and non-essential, and to appreciate the fundamental relationships existing between the various groups in the animal kingdom.

Professor Erasmus Haworth, of the University of Kansas, in the geographical conference dwelt upon the present unscientific treatment of geography in the schools, and discussed at some length the need of a reform in both method and subject-matter. Much of what is given under the name of geography is not geography at all, although it may well be admitted that this non-geographical matter is often quite interesting and in some cases possibly useful. Often, however, there is a large amount of gross and inexcusable error, along with much irrelevant and unimportant matter to be found in the text-books.

A lively discussion followed, in which the current text-books on geography were described as being nearly all bad.

In the conference in geology Professor Todd, of the University of South Dakota, read a paper on 'Geology as a Factor in Education.' He enumerated the various advantages for culture which the study presents. It is equal to any other natural science in its cultivation of the power of observation, while no other has its material so universally accessible and so permanently available. Other sciences often required the use of costly instruments and collections. It cultivates reasoning, especially inductive reasoning, and gives practice in the 'scientific method.' Because its problems deal with all degrees of accuracy and probability it especially fits one for the problems of actual life. No other science can equal it in its cultivation of the imagination and in teaching its legitimate bounds. Because of its tangible data and the importance of its conclusions to related subjects of wide interest, it more than others cultivates skill in clear and accurate description. It strengthens the moral nature by instilling love for truth, by revealing the marks of an intelligent purpose in the cosmos and by teaching man's humble position, yet great power if he learns to work with Nature. It discovers a healthful and rational recreation. It brings one in touch with many of the great economic problems of society. He concluded that its clearer and simpler principles, which have been grouped under Physiography, should be required in the high school, as was approved by the 'Committee of Ten,' and that more might be offered at that stage as an elective. He presented reasons for deferring the more thorough pursuit of the science until after fair acquaintance with chemistry, physics, botany and zoology, and then at least a year of geology (including mineralogy) should be required of all candidates for the degrees of B.Sc., C.E. and M. E., while it should be accessible as an elective to all.

Professor E. H. Barbour, of the University of Nebraska, and Professor Erasmus Haworth, of the University of Kansas, followed in a discussion which emphasized the culture value of geology in the public schools, no other culture excelling it in the cultivation of the power of close observation.

Charles E. Bessey,
Chairman of Science Conferences.

CURRENT NOTES ON ANTHROPOLOGY.

THE BEGINNINGS OF MIND.

A pleasant address on this subject by Dr. Julius Donath, of Budapest, is worth mentioning. It presents in an easy style the accepted principles of modern psychology, and in their light traces the growth of mind in relation to cerebral action in the development of the infant and child and in the species, as exhibited in the contrasts between savage and civilized modes of

thought. The scheme is comprehensive and well carried out in a brief compass.

Dr. Donath notes several of the prevalent errors in such investigations, as lack of discrimination between a given stage of culture and the psychic faculties of those who exhibit it, the mistake of assuming that mental power is correlated to cranial capacity, and especially the incorrectness of supposing a parallelism between the psychical evolution of a child and the race, as Bücke, Baldwin and others have too literally assumed. ('Die Anfange des Menschlichen Geistes,' pp. 47; F. Encke, Stuttgart, 1898.)

MUSHROOM-SHAPED IMAGES.

THEOBERT MALER and others have published illustrations of stone pillars with mushroom-shaped summits, occurring in Yucatan, Guatemala and elsewhere in Mayan territory.

In the *Globus* for May 28th Dr. Carl Sapper gives a picture of one in excellent preservation, about 30 centimeters in height, from San Salvador. On the shaft the face of a man (or monkey) is roughly outlined. Over it is the umbrella-like expansion.

These have generally been considered phallic emblems. Dr. Sapper doubts this, and in fact there is no evidence for it beyond a vague resemblance. He advances, however, no other explanation.

I would offer a suggestion. They resemble in shape mushrooms or toadstools, and why should not that be their intention? Why should it be? Because the word for mushroom in Maya (Tzental dialect) is *hu*, sufficiently near to the word for moon, *uh* or *yuh*, to recall it in sound, and the night growth of the fungus would strengthen the mythical alliance. They would thus be emblematic of the lunar and nocturnal divinity.

AMERICAN INDIAN GAMES.

THIS subject is treated in an interesting manner from ample material by Mr. Stewart Culin in the *Bulletin* of the Museum of the University of Pennsylvania, No. 3, Vol. I. He selects for analysis the game of dice or tossed staves, which he finds among sixty-one North American tribes. With much ingenuity he compares their implements and the decorations upon them, reaching the conclusion that they were all derived from some center in northern Mexico or near there; the thread of connection which leads him being the throwing-stick, or *atlatl*, of the Mexicans.

This *is* ingenious, but not wholly convincing. One may ask why the *atlatl* might not have drawn its local symbols and trappings from the game, rather than *vice versa*. The symbolism is surely more recent than the game; *atlatls* are found elsewhere without it; and there are simpler explanations of the elementary symbolism of the game in the northern tribes. In the study of development it is usually wiser to begin with the simple and proceed to the complex, rather than the reverse.

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SCIENTIFIC NOTES AND NEWS.

PREVENTIVE INOCULATION AGAINST PLAGUE.

M. HAFFKINE made recently an address on the above subject at Poona, in the course of which, according to the report in the London *Times*, he compared the invasion of India by the plague bacillus to the invasion of Australia by rabbits, to the invasion of certain soils in south Europe by the phylloxera, and to the invasion of South Africa by the organism of the rinderpest, and used these analogies to show that there are, in both the animal and vegetable worlds, diseases of which the cause, the morbid organism, can live and propagate outside the patient's body, can grow in the soil, in water, be carried by clothing, bedding, instruments, by any living or dead object. If it happens that the natural conditions of a country are favorable to the life and propagation of such an infectious organism, and as long