four hundred different stocks as against a very few mated in the case of the cow.

Such deductions as the writer opposes are, in his opinion, misleading, rest on unstable bases, namely, imagination and tradition, and are better avoided and the time better spent in legitimate genealogical work. To eke out with such matter what is feared will otherwise prove dry and without interest is unscientific and wrong. With the belief that this review, though hasty, may appeal to the common sense of the conscientious reader the subject is left, the writer believing a simple brief statement of fact preferable to a long and confusing rehash of unnecessary arguments.

VERITAS.

A COMPARISON OF THE DESERTS OF NORTH AMERICA WITH THOSE OF NORTH AFRICA AND NORTHERN INDIA.

IN a paper read before the Geographical Society of Berlin Jan. 2, Professor Johannes Walther made some interesting observations on the deserts of North America, North Africa, and Northern India. It was with the object of being able, from his own observations, to institute a comparison between these deserts that the author took the opportunity afforded by the meeting of the Fifth International Congress of Geologists of visiting the North American deserts.

The most striking contrast between the North American deserts and those of north Africa consists in the far greater wealth of vegetation which characterizes the former. In every direction the eye is met by yellow blossoming halophytæ, silver-gray artemisiæ, and prickly cacti; between the opuntias are found cushions of moss, and at the foot of the hills juniper-trees seven feet high with trunks a foot thick. Such are the features of the landscape of the deserts of Utah, where plant-growth has completely disappeared only in those places where the saline composition of the soil kills vegetation. The Van Horn deserts in western Texas, the Gila deserts in California, are equally rich in vegetation; the altitude of those deserts above the sea level makes no important difference. Either the mean rainfall in the American deserts is greater than in those of Africa, or else the flora of the American deserts is better adapted to a dry atmosphere. Although the deserts of the two continents present fundamental differences as regards vegetation, there is a surprising similarity between them as regards certain important and characteristic desert phenomena, especially with regard to the topography of the country. There is the prevalence of plains, with mountains rising from them like islands, with no intervening heaps of *débris* passing from the plains to the steep mountain slopes. This phenomenon is the more striking as there are no rubbish deltas, even at the outlet of valleys 1,000 feet in depth. Another feature common to both is the large number of isolated "island" mountains and of amphitheatre formations in the valleys; also the intensive effect of insolation, which splits the rocks and flints, and disintegrates the granite into rubbish. The denudating influence of the wind is visible not only in the characteristics of the surface forms just mentioned, which differ in important points from erosion forms, but it can be directly observed in the mighty dust-storms which rush through the desert. In North America, as in north Africa, four types of denudation products are found — gravel beds, sand dunes, loam regions, and salt deposits.

In view of such agreement of important and incidental geological phenomena in regions so remote from each other, the phenomenon of desert formation must be considered to be a telluric process which runs its course according to law, just as the glacial phenomena of the polar zone or cumulative disintegration in the tropics. Water, which is such a predominating influence in temperate regions, destroying the rocks, dissolving them chemically, while the frost pounds them up mechanically, has in the deserts about sixty days in the course of the year to do its work of destruction among the rocks and to carry away *débris*. During the remaining 300 days of the year denudation in the desert is at a standstill, but not entirely. Small and large stones are split by the heat, and huge granite blocks are severed in two by immense fissures; and thus the rocks are destroyed by dry heat at a time when denudation by means of water is reduced to a minimum. In this way the process of destruction goes on in one form or other uninterruptedly throughout the whole year. The disintegrated material is then carried away by the desert rains or by the storms, which whirl great masses of loose matter high into the air and transport it further. It is clear, therefore, that dry denudation possesses an intensive power which, although not equal to the denuding effect of water, may be compared with it.

NOTES AND NEWS.

IN the death of Thomas Hockley, which occurred on the 12th of March, in Philadelphia, the scientific institutions in that city have suffered a serious loss. Mr. Hockley was a member of nearly all the local learned societies, and as an officer of many of them did much to promote scientific work. As treasurer of the University Archæological Association, the Department of Archæology of the University of Pennsylvania, the Numismatic and Antiquarian Society, as well as of the Zoological Society and the Fairmount Park Art Association, he gave his services without pecuniary profit or even the prominence which he deserved, and he will be remembered as one who did much to advance public interests through self-sacrificing devotion to the general good.

— At the Berlin Geographical Society, on Jan. 2, Herr L. Cremer read a report upon the journey undertaken by him in the summer of 1891 to Spitzbergen, with the object of exploring the coal beds there. The author in the course of his six weeks' journey travelled along the west coast as far as Magdalena Bay, and found, besides the coal beds in Ice Fjord and Bell Sound, which were discovered by Swedish explorers, various other coal-veins which appear to be well worth working.

— In the second lecture of the Lecture Association of the University of Pennsylvania's course on "Early Religious Ideas," on Feb. 28, Mrs. Cornelius Stevenson spoke as follows: "The primitive animism of the men of the age of stone always remained at the foundation of the religion of Egypt, and continued to develop its superstitious practices, whilst the national faith had assumed an ever-growing metaphysical character. At the opening of history the Egyptians had already recognized the unity of the life-giving principle, but whatever may have been the ideas of their advanced thinkers with regard to the nature of the unity, there is no doubt that, to each local worshipper, the god he prayed to was strictly the god worshipped in his locality — and this did not exclude the recognition of the other gods. The whole structure of the Egyptian religion rested upon a belief in the divine nature of life, and, in its immortality through transformation, man could attain his immortality, not (in early times) through his merits, but through physical means. Hence the precautions taken to preserve the remains, and the statues made in his image, on which the spirit might lean in case his body should be destroyed. Metaphysical speculation on the nature of the universal soul grew out of solar worship, and, influenced by Aryan contact, at last superseded it. But even then the primitive animism, preserved in the cultus of the sacred animals regarded as incarnations of the divinity, although it assumed in the sanctuary a symbolic char-

acter, took a larger place than ever in the popular religion, and so it came to pass that fetishism was never more conspicuous in Egypt than at the time when the ideal absolute God, 'self-begotten,' had been realized in man's most noble thoughts, and been fitly described in man's most noble words."

— The death, on Feb. 20, of Professor Hermann Kopp is announced by *Nature*. He died at Heidelberg, after a long and painful illness, in the seventy-fifth year of his age.

— The friends of the late Henry Edwards have subscribed $10,000 and the American Museum of Natural History has subscribed $5,000 for the purchase of the Edwards Entomological Collection, consisting of more than 350,000 beautiful specimens of insect life, and this scientific treasure goes to the American Museum. The widow of Mr. Edwards will receive $15,000. This enterprise has been carried through by A. M. Palmer, and is one of the many good works done by that energetic manager and public spirited citizen of New-York.

— Two international scientific congresses are to be held at Moscow in August, as we learn from *Nature*. One will relate to anthropology and archæology, the other to zoology. There will be exhibitions in connection with both congresses, and appeals have been issued for the loan of objects which are likely to be useful and interesting. Among the things wanted for the Anthropological Congress are phonograms of the language and songs of different races. French will be the official language of the two meetings. The more important papers will be printed before members come together, so that discussion may be facilitated.

— The prevalent notion that the mistletoe is injurious to the apple or other tree on which it grows is disputed, says *Nature*, by Dr. G. Bonnier, the professor of botany at the Paris Sorbonne, who maintains, not only that this is not the case, but that it is actually beneficial to its host, the relationship being not one of simple parasitism, but rather one of symbiosis. He determined from a series of observations on the increase in the dry weight of the leaves, that, while in summer the mistletoe derives a large portion of its nutriment from the host, in winter these conditions are reversed, and the increase in weight of the mistletoe is less than the amount of carbon which it has obtained from the atmosphere — in other words, that it gives up to its host a portion of its assimilated substance.

— In order that the exhibition of weeds at the World's Columbian Exposition may be large and representative of all sections of the country, Byron D. Halsted, New Brunswick, N.J., having this feature in charge, asks for specimens of the worst weeds from all States and Territories. It is suggested that each botanist or local collector who may be pleased to assist in the work secure at least three specimens each of the worst weeds in his State or section. In making the specimens it is important that the following points be considered: 1. Seeds are especially desired; 2. seedlings are important in various stages of development; 3. the root system is essential, also, 4, the flower and flower cluster, and 5, the seed vessel. It may be necessary, therefore, to secure these various essentials at different times during the coming season. If the weed is a large one, stress is laid upon the procuring of specimens while they are small enough so that the whole plant, roots and all, can be mounted without bending upon an herbarian sheet of ordinary size; that is, not over a foot in length. They are not to be mounted, however, by the collector. That unnecessary duplication may be avoided, persons who contemplate collecting specimens should signify their intention to Professor Halsted, and allotments will then be made, the assignments depending largely upon the locality. It is hoped that each State in the Union may be represented by specimens in this national exhibit of our worst weeds. The collecting must all be done during the present season, and the specimens sent in for mounting, labelling, etc., by Dec. 1.

—The January number of *Petermann's Mitteilungen* contains an interesting map, by Dr. E. Hahn, of the "Kulturformen" of the earth, showing the areas within which different methods of getting a living out of the soil are employed. Dr. Hahn discards the old-fashioned division into hunters, fishermen, shepherds, and agriculturists as containing a fundamental error; for these three successive "stages" he substitutes six "forms." The simpler forms may have been more widely spread in the earlier periods of the world's history, but all exist side by side at the present time, as methods of cultivation arising from the physical and climatic conditions of the regions in which each is employed. The simplest form is hunting and fishing. The large area which Dr. Hahn assigns to this form in North-eastern Europe and Asia is somewhat remarkable. Next comes what Dr. Hahn calls Hackbau, which we may translate by hand-tillage. This form is characteristic of Central America, the basins of the Orinoco and Amazons, tropical Africa, Further India, and the Malay Archipelago, with the exception of certain coast districts. Plantations, the third form, are found wherever coffee, rice, sugar, are grown on a large scale. Next comes what Dr. Hahn calls "our European and West Asiatic agriculture," characterized by the use of the plough, the employment of oxen as beasts of burden, and the growing of corn. Originating in Mesopotamia, this form has spread with but slight changes over all the more civilised parts of the world. With regard to the fifth form, cattle farming, Dr. Hahn states that the only circumstance which was considered characteristic of the shepherd's life was the fact of his being a nomad. This excluded all whose herds consisted of other animals than sheep or goats. Larger cattle require better food than could always be obtained on the march. He therefore puts all owners of herds in one category, whether nomads or settlers. They are spread over all Central and Northern Asia, and are found in Arabia, on the borders of the Sahara, in South Africa, and in certain portions of Northern Europe, America, and Australia. A curious feature is a long, narrow strip extending from Somaliland into South Africa at varying distances from the East Coast; by his own account, however, it should not have been reckoned to the cattle-farming regions, as the cowherds make little or no use of the milk given by their animals, which are looked upon as mere standards of value and wealth. The last is the elaborate form of cultivation in small plots, which is the only method by which the exhausted soil of China can be got to maintain its huge population.

— Dr. Ira Remsen, professor of chemistry in Johns Hopkins University, Mar. 11, addressed a communication to President Harper of the Chicago University, declining his invitation to a professorship in that institution. Professor Remsen's decision is the cause of great gratification in Baltimore university circles.

— Dr. C. W. Stiles, medical zoologist of the U. S. Department of Agriculture, has been elected foreign corresponding member of the Société de Biologie, Paris, France, to fill the vacancy caused by the death of Professor Joseph Leidy of the University of Pennsylvania.

— Joel Chandler Harris's new book, "On the Plantation," is said to contain fresh stories of Brer Rabbit, Brer Owl, Brer Buzzard, and other characters immortalized in "Uncle Remus." Much of the book, however, is understood to be the story of the author's own life, and it is described as a singularly fascinating narrative. E. W. Kemble has illustrated the book, which is to be published immediately by D. Appleton & Co.

— E & J. B. Young & Co. of New York have sent us a copy of the "Star Atlas," for amateur astronomers, with explanatory text by Dr. Hermann J. Klein, and translated and adapted for English readers by Edmund McClure, M.A., M.R.I.A. It contains eighteen maps printed by E. A. Funke, Leipsic, and is published, under the direction of the Committee of General Literature and Education appointed by the Society for Promoting Christian Knowledge, London, at the low price of three dollars. The maps show all the stars from 1 to 6.5 magnitude between the North Pole and 34° south declination, and all nebulæ and star clusters in the same region which are visible in telescopes of moderate powers. The "Atlas" is an imperial 4°, strongly bound in cloth, with illuminated cover, and contains 72 pages of descriptive text, with 18 charts beautifully printed from heliographical reproductions of photographs. It is a model of its kind, being handy, compact, accurate, and of practical service to amateurs, comet-hunters, and students.