also possessed in common certain temperamental peculiarities, and their voices would instantly remind the hearer of each other.

Now to go back to our friend's chart, where the perpendicular line represents nine successive male Does. If every one of these eight male Does was a first child of each successive marriage, the Doe influence would be at a minimum and the transmission of the peculiar traits of the Does most feeble and uncertain. If each one of the eight was the youngest child in a family of six, the persistency of Doe traits would become more intense with each successive generation. For some purposes the tradition of the seventh son of the seventh son becomes something more than a mere superstition. If, however, in the third or fourth generation the surname was transmitted by a son whose father was the second husband of a widow who had borne children by a former husband, the family traits of the Does would doubtless be conspicuous by their absence. There have been no such marriages in the line of Does above mentioned for eight generations.

Too little is known concerning this subtle and intricate question to enable one to venture an estimate of the percentage of tendency towards family traits along the line of nine Does as compared with any other line from any given individual of the two hundred and fifty of the first generation from the ninth; but we think the challenge of our friend has been accepted and met, and sufficient proof has been submitted to show to any candid mind that a vastly greater proportion than one two hundred and fiftieth may be expected to flow along the line represented by the eight individuals who transmit the surname from the first to the ninth generations. Indeed, we think we are treading on solid ground when we assert that in the letters written by the Doe who was an ecclesiastic of the thirteenth century, and which have come down through six hundred years to the present time, the "Doe traits" are strikingly evident.

We should be gratified to learn if others familiar with other families than the Does are not fully satisfied that "family traits" are very persistent along the line of the surname.

AN ENQUIRER.

"SCIENTIFIC" GENEALOGY — A REJOINDER.

FROM the commencement of interest in the history of old American families the marked tendency has been, and is, for the chronicler to depart from the strict records, and attempt to trace reputed traits and oftentimes marked physical characteristics of the original emigrant ancestor and founder of the family through eight and nine generations, and connect the aforesaid qualities with the persons now bearing the surname descended from him. And a pride in one's ancestry is not reprehensible so far as these ancestors were healthy, energetic, honorable citizens, not less as honoring them than as taking satisfaction in the probably clear minds and strong constitutions we inherit, barring an untoward environment. But where the historian, considering a living person's little tricks of habit, peculiarities of appearance, and the like, ascribes these as in fact undoubtedly inherited from the original ancestor of nine generations previous, it becomes necessary to direct the attention of the sincere seeker for truth to certain self-evident truths, which are none the less patent and far-reaching, if comparatively unheeded and little studied in the past. To instance an average case: John Brown is a living person of the ninth generation from the first James Brown, who, we will suppose, came to this country about 1630. A simple mathematical computation shows that John Brown has had 510 distinct ancestors in these generations, of whom, at a liberal estimate, 50 may be duplicates owing to intermarriage of relatives. If there is a person in New England who can state his ancestry since 1630 completely with proofs, the writer, after some years careful research and acquaintance with men pursuing such study, has failed to discover him. As a matter of fact, the genealogist who has discovered and proved half his grandparents is exceedingly uncommon, and probably not one-twentieth of the persons who have chronicled the genealogy of a surname have known over 50 of their ancestors. They have paid, usually, almost their entire attention to the one surname in which they were interested and which filled their mind to the exclusion of the greater number.

In the writer's opinion he probably inherits from the 256 emigrant ancestors such a blending of qualities and physical characteristics, that to ascribe peculiar traits of any particular one of them to a living descendant is a fallacy, unsupported by reliable circumstantial evidence and persisted in in spite of the fact that the 255 other ancestors of the first American generation had qualities and traits of which he knows nothing, nor even the names of most; and probably, as far as the historian can surmise, each of the other 255 were fully as instrumental in bequeathing peculiar qualities, etc., as the one whose surname sexual distinction has given him. How does the matter look faced in the following manner? James Brown was one of 256 of John Brown's original American ancestors; is it likely or probable or a desirable thing for a genealogist to prove that $\frac{1}{256}$ part of the whole, when, as far as mortal can tell, all had probably much the same influence on the descendant, that this $\frac{1}{256}$ part has determined in a prominent and noticeable way the identity of the descendant? If one of the 256 were a person of color, an African, in the fourth generation, much more the ninth, the scientists tell us the color trace is well-nigh obliterated as far as discoverable. The writer does not for a moment combat the well exhibited inheritance of peculiar appearance and traits of a man from his father or mother, his grandparents or great-grandparents, or in rare cases from great-great-grandparents, but beyond these limits the historian has little to encourage him in his attempt beyond uncertain and traditionary tales.

The writer is descended from two ancestors, for both of whom the respective historians have claimed qualities and pronounced appearances of person, and remarked them prominently in all the living descendants; and the writer as yet fails to discover, after a candid if somewhat anxious self-examination, any of these characteristics. How often the mother's relatives fondly see clearly her look, her habits and character in a child for whom the father's family claim the self-same points; and the writer is familiar with the facts in a case where well-meaning friends have told parents of the strong likeness a child bore them, not knowing the child to be of entirely foreign parentage — adopted. My experience has been that a good part of the grounds for the side of the question I disbelieve in are as insecure as those just instanced. It is an old saying that one finds what he seeks for; that is, he thinks he finds it, which answers the same purpose for him.

To compare the human race to any of the brute creation as regards this question is unjust and mistaken, as in selection, cohabitation, and kindred vital processes, the cow — for instance, of Jersey or other strain — has the advantage of careful and long-continued selected inbreeding, where the human being is the result (even for nine generations) of over

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-