

Although the animal was completely imbecile, it retained the nervous mechanism for nearly all bodily functions. While these results seem, at first, contradictory to those derived from extirpation and electrical stimulation, yet, as Edinger shows, they merely indicate that the organs and processes of consciousness are merely superposed upon the substructure of the instinctive processes and axial centres.

In man, who has acquired greater dependence upon reflection and other higher functions, the primitive independence of the lower centres is retained for a relatively short time during childhood. The above illustration may at least serve to show how mutually dependent all these sciences are and that we seem to be gradually approximating toward a connected theory of nervous action and evolution.

SOME CURRENT NOTES UPON METEORITES.

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It may well be hoped that the revived attention which has recently been shown in the study of that interesting class of bodies known as meteorites, will result in giving us a more practical, if not a more certain, basis for their consideration. If in the onset we meet with conflicting theories and much uncertain data, we are only upon the same ground where most scientific inquiry begins. If we cannot tell whence an aerolite comes, we usually do know the fact and date of its fall, its chemical and lithological composition, specific weight and peculiarities of structure, the phenomenon attending its flight, and often the precise radiant point from whence it came. We hold the object in our hands, and can study its physical properties, and its cosmic as well as its telluric history. All these particulars have been observed, compared, studied, and in part determined by thoroughly competent scientific men, and yet, to-day, there is no accepted scientific name to indicate their special line of research, none for this department of science itself. These primary needs are yet to be filled. Heretofore two distinguished writers and students in this field of inquiry have each proposed a specific name for the science, and, while neither of the terms seems to be objectionable, neither of them seems to have been generally adopted or used. In 1847 Shepard proposed the term "Astropetrology," and in 1863 Story-Maskelym suggested that of "Aerolitics" to distinguish it as a department of science. Both from the priority of suggestion, and as a fitting tribute to the zeal and valuable labors of Professor Shepard in that behalf, will it not be proper and convenient to adopt his proposed name, astropetrology, which, in accordance with common usage, by a simple change of its final syllable "gy" into "gist," will also designate a person devoted to its study? How comes it that a subject presenting most interesting and possibly serviceable problems in astronomy and physics should thus far be deficient in the very rudiments of a distinctive science—even a name? Certainly not from lack of patient labor and intelligent investigation by thoroughly competent men. Smith and Genth upon its chemical side, and Newton, Eastman, Langley, Kirkwood, and others upon its astronomical, have, in our country, done much to determine the data upon which present theories rest; while abroad, among a host of others, Haidenger, Meunier, Tschermak, and Brazina have worked at the very bases of efficient progress in scientific research, investigation, and the classification of the objects themselves. In this last-mentioned feature, however, lies a discouraging fact. These several systems do not agree, or rather, while serviceable and consistent in themselves, they, to some extent, seem to antagonize each other in the hands of the collector or possessor of meteoric examples. In a given example not properly labelled, or when labels have been confused, and perhaps changed places, its possessor will probably find it quite accurately described upon reference to one of these systems, but from caution, upon reference to another system, he will find described peculiarities not seen in, and possibly antagonistic to, the same fall as that which he has in hand. How is he to identify it? Specific weight may help the determination, but, standing alone, it cannot be conclusive. Chemical analysis is impracticable and not wholly conclusive. Now, if the absolute necessity of

accuracy in the identification of the fall is considered for a moment, there will also result a partial appreciation of its vast importance in all its collateral as well as direct relations. For instance, the supposed example almost exactly resembles another described fall, but one occurred in India, A.D. 1822, while the other fell in Iowa in 1847, both were well observed as to radiant point, time, and course of flight, but each was the reverse of the other in all these important particulars; in short, they only resemble each other in physical characters, and a confusion of their identity may destroy all their value as data in their theoretical and astronomical relations. Identity of radiant point, time, and course of flight and a possible periodicity in observed falls will interest the astronomer even more than identity of chemical composition or physical characters, though each is a factor in his theory, and each must be, if possible, an observed fact. If a single fact may uphold or upset a theory, it should certainly be an observed fact. The purpose of these observations is to inquire what may be done to base investigations of these wonderful phenomena, the most suggestive and impressive of nature's visible displays, and the objects which they bring to us from the regions of space, upon ground more worthy of consideration and research, than as merely objects of a collecting fad, or a money-making zeal in collecting and selling examples. May we not begin by some practical methods for determining and perpetuating the identity of each example by describing and authenticating with the greatest exactness every fall and every fragment? For accomplishing this purpose the number of examples is already large, but it will be constantly augmented by new accessions which may present new physical features and new, perhaps more definite, data, the value of which will be carefully determined by the astronomer and chemist, and probably with greater fidelity and accuracy than by the observer who witnessed its fall, or the author who has the example in his hand from which to write its description. In a subsequent paper I shall venture to suggest some simple expedients for avoiding some defects and errors which have become a great and increasing obstacle to progress in this most interesting department of science.

BIOLOGY IN OUR COLLEGES: A PLEA FOR A BROADER AND MORE LIBERAL BIOLOGY.

BY C. HART MERRIAM, WASHINGTON, D. C.

WHEN it became fashionable to study physiology, histology, and embryology, the study of systematic natural history was not only neglected, but disappeared from the college curriculum, and the race of naturalists became nearly extinct. Natural history, as formerly understood, comprised geology, zoölogy, and botany, and persons versed in these sciences were known as naturalists. Geology gradually came to occupy an independent field, and is now everywhere taught separately; hence, for present purposes, it may be dismissed, with the reminder that the naturalist who knows nothing of geology is poorly equipped for his work. A knowledge of the two remaining branches—the biological branches—was looked upon as sufficient to constitute a naturalist. But the kind of knowledge taught underwent a change; the term "naturalist" fell into disuse to be replaced by "biologist," and some would have us believe that even the meaning of the word biology is no longer what it was. Systematic zoölogy has gone, or, if still tolerated in a few colleges, is restricted to a very subordinate position. Systematic botany is more fortunate, still holding an honored place in many universities, though evidently on the wane.

Is it not time to stop and inquire into the nature of the differences between the naturalist and the modern school of instructors who call themselves "biologists;" into the causes that have brought about so radical a change, and into the relative merits, as branches of university training, of systematic biology compared with the things now commonly taught as biology?

Is it not as desirable to know something of the life-zones and areas of our own country with their principal animals and plants and controlling climatic conditions, as to be trained in the minute structure of the cellular tissue of a frog? And is not a knowledge