

A BIT OF SUMMER WORK.

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Notwithstanding the number of "Summer Schools of Science" to be in operation this season, many teachers are likely to pass the vacation at a distance from the facilities afforded by organized laboratories. How shall they employ their time?

Doubtless they all need rest, and in most cases at least a fortnight should elapse before any intellectual labor is undertaken. An equal period of repose may well occur just before the renewal of teaching in the Fall. But the teacher who hopes to make his instruction each year more thorough and successful than the last, will be pretty sure to spend the remaining month or two in the search of help from books, and, while regretting the vagueness of the information thus obtained, may seldom think of making it more real by personal observation.

Now it is true that in some branches of science this may require appliances not readily obtained. This is the case with Chemistry and Physics, and some parts of Natural History. But Botany and Entomology may be pursued under almost any circumstances, and I venture to suggest that at least one kind of *anatomical* work may be carried on with but a slight amount of apparatus.

Obviously, the summer is not the most favorable time for study of the viscera, while anatomical details respecting the muscles, vessels and nerves are not especially required for ordinary instruction. But the *brain* is not only the organ least satisfactorily treated in the text-books, but at the same time the one concerning which the most should be known, from the double standpoint of physiology and psychology.

But how can the teacher procure brains, and how shall he preserve them when obtained?

The question is a perfectly natural one in view of the prevailing impression that cerebral structure is to be learned from the human brain alone. So far from correct is this idea, that from a single animal brain, perfectly fresh or well preserved, more may be gained than the average medical student learns from the human brains usually examined in the dissecting-room.

This is due to the fact that, excepting the absence of the occipital lobes of the hemispheres, the brains of the cat, the dog, the rabbit and the sheep present nearly all of the structural features of the human brain, while their smaller size and greater accessibility better adapt them for manipulation and for the preservation of the numerous specimens which are needed to display all parts of the organ.

Of the animals above named the cat seems to be the most favorable subject. It is always and everywhere obtainable; the brain is larger than that of the

rabbit, and more easily extracted than those of the sheep and most dogs.

Some features of the brain, as the coloration of different parts, and especially the relation of the gray and white substances, are better seen upon fresh specimens; but the beginner will do well to examine hardened brains first, so as to become familiar with the form and relative position of the parts, and with their names.

Among the instruments needed for the removal and dissection of the brain the most essential are a very sharp knife, and a pair of "wire-nippers" with the blades set at a slight angle with the handles. *

As an aid to the study of the brain any work upon Human Anatomy will be found useful. The best are those of "Quain" and "Gray." Descriptions, without figures, of the brains of the sheep, and of the dog and rabbit, are given in the little works of Morrell and Foster and Langley. With some modification these apply to the brain of the cat. †

Finally, it is hardly necessary to urge that outline drawings be made of the brain as a whole, and of its parts as exposed by dissection. If this is done, by the end of the summer the teacher will have become better able to appreciate the peculiarities of the human brain when one comes in his way, and will have laid a substantial foundation for the physiological and psychological instruction which he may be called upon to impart.

ANTIPATHARIA OF THE "BLACK" EXPEDITION.—In vol. iv. No. 4 of the *Bulletin* of the Museum of Comparative Zoology at Harvard College, Cambridge, Mass. (February), I. F. Pourtales describes twelve species of this interesting group taken in the Caribbean Sea (1878-79). In determining the species an attempt has been made to use the differences in the shape of the polyps, as well as the disposition and form of the spines to draw characters for a much-needed revision of their classification. It would seem as if there were at least two different types of spines: the triangular compressed and the more cylindrical. These latter are generally more densely set, even assuming sometimes a brush-like appearance, as in *Antipathes humilis*, a new and wonderfully spinous species, figured but not described by Pourtales. These cylindrical spines are also unequal on the two sides of the pinnules, being longer on the side occupied by the polyps, with a very few around the polyps. The triangular spines are disposed regularly in a quincuncial order around the pinnules, and in a cleaned specimen nothing indicates the place formerly occupied by the polyps. In one series, however, *A. desbonni*, the spines are in regular verticils. There would appear to be a connection between the shape of the polyps and the shape and disposition of the spines. Those species with triangular spines have polyps with longer tentacles than those with cylindrical spines, and the tentacles have a greater tendency to become regular in shape.

* These nippers are imported from Germany by H. Boker & Co., of New York, and are for sale by A. J. Wilkinson & Co., of Boston, and Treman, King & Co., of Ithaca, N. Y. They cost about 75 cents.

† Hektograph copies of instructions for the removal, preservation and dissection of the cat's brain may be had upon application to Mr. F. L. Kilborne, Anatomical Laboratory, Cornell University, Ithaca, N. Y.