of the students often are premedical students, the course should be so arranged that continuity with human anatomy and embryology is attained.

One of the greatest difficulties is the inconsistency in terminology in current text-books and manuals on the various vertebrate types. Consideration of a single organ system will illustrate this. In an anatomical work of recent date, admirable in execution and illustration, the mesonephros of the shark is called a "kidney," without any qualification or explanation of the term. The same criticism applies also to many manuals in use in courses in elementary zoology, in which the mesonephros of the frog is fully discussed as a "kidney." In other manuals the accessory nephritic duct of the shark is usually called a ureter, although it has no relation to the ureter of the amniotes.

In dealing with the genital system, the old term vas deferens is used almost exclusively in disregard of the preferable B.N.A. term "ductus deferens." The latter the medical student must know. At the base of the ductus deferens or Wolffian duct of the shark and the amphibian is a small dilatation which is called the "seminal vesicle." This term the student learns, and perhaps remembers, only to discover later that this terminal dilatation is not comparable to the seminal vesicle of human embryology, but corresponds to the ampulla ductus deferens, the mammalian seminal vesicles being evaginations of the Wolffian duct, which occur only in certain mammals, including man. In a like manner the enlargement of the oviduct of many amphibians is called a uterus, although it is more nearly homologous to the shell gland of certain sharks, and certainly should never be confused with the eutherian uterus.

This same criticism of terminology may be extended in a similar manner to the other systems and is the source of much confusion to the student. Assuming that the premedical student will carry some small bits of information and some few anatomical terms into the first year of medicine, it is evident that he must not only learn more terms, but must unlearn and relearn many of those current in general zoology and comparative anatomy. Otherwise he will not gain a clear idea of the homologies between the organs of the lower classes of vertebrates and man, and will lose one of the most valuable lessons of comparative anatomy—the position of man in a phylogenetic system. It is just as easy to present accurate terms in the first instance when all terms are new and equally unfamiliar to the student, as to use those which are anatomically incorrect and which must be abandoned later.

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LUMINOUS SPIDERS

THE issue of August 21 contains a very interesting letter from Barnum Brown on his discovery in Central Burma of a luminous spider whose abdomen glowed with light while "fireflies sparkled here and there." May not this be analogous to the effect obtained by that prank of childhood when we caught and fed fireflies to the ordinary hop toad and then turned him loose on the lawn in front of the veranda to the consternation of the older folks, who could see but not comprehend the bouncing light. Maybe the spider had feasted plentifully on the abundant fireflies.

EDWARD PIERCE HULSE

In my opinion, there are three explanations of this luminosity: First, the eating of the luminous portions of fireflies by the spiders; second, injection by bacteria or fungi; third, a true luminous organ. Mr. Hulse touches upon the first possibility in his letter and the answer to this, I think, is to be found in the habits of spiders. Spiders are provided with sucking mouth parts, and do not devour the material as a whole. If this individual had selected only the luminous portions of fireflies, light would have shown not only on the abdomen, but through the thorax and head as well. I think the answer to the second possibility, injection by luminous bacteria and fungi, would hold equally true, that both thorax and head would have shown luminosity had the spider been injected. As a matter of fact, I was sufficiently close to determine accurately that only the abdomen glowed. I think that it was definitely provided with a true luminous organ.

BARNUM BROWN

SCIENTIFIC BOOKS

Telephone Communication. By C. A. WRIGHT and A. F. PUCHSTEIN.

"TELEPHONE Communication," written by Professor C. A. Wright in collaboration with Professor A. F. Puchstein, is a text-book intended for use in engineering schools. It deals primarily with the functioning of a telephone system in transmitting and reproducing speech sounds. In this connection it discusses sound, the operation of telephone transmitters and receivers in performing the conversions between sound and electrical energy; the transmission of electrical currents in lines and impedance networks, and the means of measuring and specifying the transmission efficiency of telephone circuits and apparatus.