Supplementary Observations to the Paper on the Structure of Bone : (p. 382.) BY JOHN HOWSHIP, ESQ.

IN my inquiry into the mode in which ossific matter is deposited in growing bone, I thought it right to endeavour to ascertain how far the appearances of this process in the larger quadrupeds and in the cetacea, were similar to those observed in the human subject; and to determine, if possible, whether such appearances might be considered as arising from a general principle in the economy of nature. Upon the same ground, it appeared right to inquire whether the structure and organization of full grown bone were formed upon one and the same model in the larger, and in the smaller classes of animals. With a view to the clearing up this point, I have, since my observations on the structure of bone were read to the Society, made the following examinations, a short account of which I beg leave to subjoin in this place by way of Appendix to that paper.

Transverse sections were taken from the humerus of a full grown lion, the femur of a young elephant, and the margin of one of the ribs of an enormous whalebone whale, that was between 90 and 100 feet in length. In each animal the most compact part of the bone was selected; and the specimens, after being examined in the microscope, were calcined, and prepared so as to exhibit to the greatest advantage the course and appearance of the longitudinal canals. Nothing, however, differing in principle from what has been already related, was discovered. In each instance, the canals were observed to be stored with an abundant supply of white concrete medullary matter; in each, the different parts of the canals varied in their dimensions; in all, the surfaces of the canals were particularly smooth, and of a polished appearance; and in all, there were numerous lateral communications.

In the lion, however, these canals were found to be smaller in diameter, than is usual in proportion to the size of the bones, and they were also less numerous than in most other animals that I have examined: appearances which are perfectly consistent with the highly interesting observations on the structure of bone, in the Lectures on Comparative Anatomy, by Sir Everard Home, the extent and success of whose labours have proved worthy of so magnificent a subject, as the collection of the late Mr. Hunter.

In the elephant, and the whale, they were remarkably large and distinct, so as to bear a just proportion to the magnitude of each of these animals; they were of course many times larger than any I had before seen, although in every other respect precisely the same.