

but the general principles and main structures all stand. I was much struck with this recently in studying a remarkable specimen now in the National Museum at Washington. It is a large species of *Asaphus*; the same genus which gave to the late Mr. Billings the limbs of a Trilobite, the first ever described; but in the Washington specimen they are remarkably perfect. Each limb presents a series of joints resembling those of the tarsus of an insect, each joint being of conical form with the narrow proximal end articulated to the enlarged distal end of the previous one, so as to give great facility of movement and accommodation for delicate muscular bands. This tells us of muscular fibre and tendon fitted for flexing and extending these numerous joints, of motor nerves to work that marvellous contractile power of the striated muscle, whose mode of action is still an insoluble mystery, yet one practically solved in the remote Cambrian age for the benefit of these humble inhabitants of the sea. If we could imagine that the inventive power to perfect such machinery was present in the brains of these old Crustaceans or Arachnidans, we might wish that some of them had survived to instruct us in matters which baffle our research.

It is long since the compound eyes of these Trilobites, as illustrated by Burmeister, gave Buckland the opportunity to infer that the laws of light and of vision were the same from the first as now. But what does this imply? Not only that the light of the sun penetrating to the depths of the Cambrian sea, was regulated by the same laws as to-day, but that a series of cameras was perfected to receive the light as reflected from objects, to picture the appearance of these objects on a retinal screen as sensitive as the film of the photographer, and thereby to produce true perceptions of vision in the sensorium of these ancient animals. I have before me a fragment of the eye of a Trilobite (*Phacops*), in which may be seen the little radiating tubes provided for the several ocelli of the compound eye, just