life-boats, which are steadied on their keels by the one principle, and preserved from foundering by the other ; or as we find them united by the boy in his mimic smack, which he hollows out and decks, in order to render it sufficiently light, while at the same time he furnishes it with a keel of lead, in order to render it sufficiently steady. The old articulata abound in marks of ingenious mechanical contrivance. The trilobites were covered over back and head with the most exquisitely constructed plate armour ; but as their abdomens seem to have been soft and defenceless, they had the ability of coiling themselves round on the approach of danger, plate moving on plate with the nicest adjustment, till the rim of the armed tail rested on that of the armed head, and the creature presented the appearance of a ball defended at every point. In some genera, as in Calymene, the tail consisted of jointed segments till its termination ; in others, as in Illænus, there was a great caudal shield, that in size and form corresponded to the shield which covered the head ; the segments of Calymene, from the flexibility of their joints, fitted close to the cerebral rim ; while the same effect was produced in the inflexible shields, caudal and cephalic, of Illænus, by their exact correspondence, and the flexibility of the connecting rings, which enabled them to fit together like two equal-sized cymbals brought into contact at every point by the hand. Nor were the ancient crinoids less remarkable for the amount of nice contrivance which their structures exhibited, than the ancient molluscs or crustaceans. In their calyx-like bodies, consisting always of many parts, we find the principle of the arch introduced in almost every possible form and modification, and the utmost flexibility secured to their stony arms by the amazing number of the pieces of which they were composed, and the nice disposition of the joints. In the Pentacrinites of the Secondary period (see fig. 97), an immense spread of arms, about a thousand in number, and