

Even when it has been completely carried out, the connections of the superficial sub-segments remain exactly what they are in the "duplex" type. For there, as has been shown, each half-column springs from its own sarcodic annulus, and receives at its base a radial stolon from the annulus next interior to it; the connection between the successive annuli being made by the passage of two series of radial stolons from each annulus (Pl. V. fig. 2, *d, d, d, d'*), into the two series of half-columns of the annulus exterior to it. And in the "complex" type, as a careful examination of fig. 5 (p. 40) will show, the pedicle by which each superficial sub-segment is connected with the sarcodic annulus lying beneath its *outer* extremity (see Pl. V. fig. 14) may be considered as its own proper base, whilst that which connects its *inner* extremity with the annulus next interior to it is the homologue of the radial stolon of the "duplex" type.

Now as the displacement, which at first sight conceals this homology, shows itself in the life-history of certain individuals of the type which are developmentally less advanced than the rest, it may be pretty safely affirmed to have taken place in the genetic history of the race. And we have a curious confirmation of this assumption in the fact that the fossil specimens of *Orbitolites complanata*, which are so abundant in the Paris Tertiaries, show an incompleteness in the process of differentiation, which stops at the stage at which the chamberlets of the superficial layers are still continuous with the cylindrical chamberlets of the intermediate stratum.

If then we were able to trace out the entire Palæontological history of the Orbitoline type, we should pretty certainly find a long succession of intermediate forms, gradationally leading up from the "simplest" to the most "complex"; the typical *Orbitolites complanata* of the present time being the most highly specialised form of it with which we are acquainted. But although its descent from some "simple" form can scarcely be doubted, yet we cannot fairly assume that either of the species previously described represents its ancestral type, and is capable of evolving itself under favourable conditions into the "complex" form. For I not only find a very constant limitation of size to prevail, alike in *Orbitolites marginalis* and in *Orbitolites duplex*, of each of which forms I have examined many hundred specimens; but I have met, in several of the largest examples of each, with that undivided or imperfectly partitioned condition of the peripheral annuli, which seems to indicate the feebleness (so to speak) of old age, rather than such an excess of vigour as would be needed to carry them on to a higher grade. It appears to me, therefore, that the two species just named are to be considered as perpetuating earlier types of the genus; whilst the occasional occurrence of the "simple" plan in the central portion of the disks of *Orbitolites complanata* marks a *reversion* to that earlier plan, which indicates a want of developmental power in the individuals presenting it. And a clue to this deficiency is, I think, to be found in that remarkable inferiority in the size of the "nuclear mass," which I have already spoken of (p. 38) as a constant feature in these sub-typical forms.