in the Tropic of the Capricorn). In the figures of the Pls. 131–140 (as well as in my Monograph, 1862, Taf. xv.–xxii.) the four northern or canceral spines are marked by the characters *b*1 to *b*4, and the four southern or capricornal spines by the characters *d*1 to *d*4. Also the eight tropical spines lie (crossed in pairs) in two meridian planes; they do not lie, however, in those perradial planes, in which are placed the twelve other spines; but in two different meridian planes, crossing the former at angles of 45°; we call these the "secondary" or "interradial" meridian planes. Each of these planes is determined by the spineless axis and by two crossed interradial or secondary axes; in each of the latter lie two opposite tropical spines. In the first interradial meridian plane lie *b*1 and *b*3, *d*1 and *d*3, in the second *b*2 and *b*4, *d*2 and *d*4.

It is a most interesting and important fact, that in all Icosacantha (Acanthonida and Acanthophracta) this regular disposition of the twenty spines (in five parallel zones and four meridian planes) becomes constantly preserved by heredity, whilst the form and size of the different spines are extremely varied by adaptation.

Only in a minority of the Icosacantha are all twenty spines perfectly equal or nearly equal in size and form; and then it is often very difficult to distinguish the different zones in their disposition. But in far the greater part the size or the form of the twenty spines becomes different in different zones; and then we can commonly distinguish easily the five different zones. Firstly, in all Quadrilonchida and Dorataspida, the four equatorial are distinguished from the sixteen other spines either by form or by size, and often in a very remarkable degree. As soon as these four principal spines are recognised, it is easy to determine also the sixteen others; for the eight polar spines lie in the same two (perradial) meridian planes as the former, whilst the eight tropical spines lie in two different (interradial) meridian planes, intersecting the two former at angles of 45°. Commonly, therefore, this distinction is rather easy.

In the majority of the Icosacantha all four equatorial spines are exactly of the same form and size. But in four families the two opposite spines of one equatorial axis are much larger, or of another form, than those of the crossing axis. This is the case in the Amphilonchida, Belonaspida, Hexalaspida, and Diploconida. Therefore we here call the major equatorial axis (with larger spines) the "hydrotomical axis," and the minor axis (with smaller spines) the "geotomical axis." Correspondingly, the meridian plane, in which the two larger equatorial spines are placed (*c*1, *c*3) and the appertaining four polar spines (*a*1, *a*3, *e*1, *e*3) may be called the "hydrotomical plane"; in the remarkable family of Hexalaspida (Pl. 139) all six spines of this hydrotomical plane are much larger than the other fourteen. Perpendicular to this plane is the second perradial meridian plane, which we call the "geotomical plane"; in it lie the two smaller equatorial spines (*c*2, *c*4) and the corresponding four polar spines (*a*2, *a*4, *e*2, *e*4). In some Hexalaspida (*Hexonaspis* and *Hexacolpus*) the six spines of the hydrotomical plane become so preponderant that