

justified in endeavouring to reconstruct the plant in question? If, too, there can be pointed out a Composite possessing the character which reason would infer to be those of the founder of the family, is it wholly absurd to suppose that in this genus we have the unaltered descendant of the archetypal Composite, unaltered except, perhaps, in height and in bulk? Remembering the climate of the Devonian, "Gaspé sandstone" period or the Coniferous, and the Middle Carboniferous—one damp, warm and foggy over large areas—giving an impetus to all kinds of leaf-growth; bearing in mind that although there were hills wooded to their summits, and most likely high, wooded plains, there were also immense marsh-stretches. Keeping these before us, one would expect to find, after wading through a dense swamp, dense with ferns, horsetails, or, perchance, a reed-like, perchance a tall, stout, tree-like plant, bearing circles of linear leaves at intervals around the stem. It must here be remembered that all the early plants bore their leaves in circles or whorls. One would expect to find at the summit of the stem, so as to catch all the possible sunlight of the day, a solitary, dark-purple head of many flowers. Solitary, for the plant-energy of the warm, damp period would be given to leaf rather than to flower-growth; dark-purple to attract the orthopterous insects of that day. One would expect to find each flower, five-stamened, united around the two carpelled pistil as at present; without this circle, five barren filaments or "staminodia," which, in the hot, steaming atmosphere, would quickly develop into five petals, soon to be united into a tubular corolla.

Now, singular to say, a plant possessing all these characters, grows today in ponds and marshes along the Atlantic seaboard of the United States,

more abundant toward the south, and reaching its northern limit in the State of New Jersey. This plant, a true tubular Composite, has a smooth stem of two feet or more in height; linear and bristle-formed leaves, whorled, about four to five inches in length; one to three heads of dark-purple flowers, erect and terminal *i.e.*, at the summit of the stem. May not this plant, the *sclerolepis verticillata* of Cassini, the *sparganophorus verticillatus* of Michaux, be a near relative to, if not the unchanged linear descendant of the first Composite? This granted, it is easy to see how, step by step, the whorled leaves would be changed to opposite or alternate, and now the life-force thus saved would be employed, first, in developing larger though fewer leaves; secondly, in increasing the number of heads of flowers. Still later on would occur the division of an extensive order into four sub-orders, to the second of which, as has been stated, our Aster belongs. And who shall limit the Aster to a later period than the Miocene Cenozoic? Extending today from the Arctic circle to Florida and to Mexico, and from ocean to ocean, why may not its progenitor be looked for in the Miocene of Greenland, or in the Eocene of our own North-West?

And now our Aster has told us something regarding its history. It is true that much is omitted, much left unsaid, still enough to awaken curiosity, to stimulate research. One point remains for discussion. Are its structural peculiarities, are its analogies and homologies the outcome of a Divine plan, or are they due to a certain instinctive, unknown, yet known, blind, yet intelligent, intuitive yet superinduced forethought on the part of the plant itself? Which is the wrong conclusion, which the preposterously ludicrous alternative? Is it more ridiculous to suppose that a