for more than twenty years he was able to steer clear of the mistakes which misled Brongniart (1826), Robert Brown (1831), and Schleiden (1837), and to prove (1846) that the egg-cell within the embryo-sac of the ovule is stimulated to development by the advent of the end of the pollen-tube. This was at once corroborated by Von Mohl and Hofmeister, and many details have since been added. Strasburger, in particular, has been successful in working out the intricacies of the process, showing that as in animals, so in plants, fertilization is the intimate and orderly union of two sex-nuclei, the nucleus of the ovum, and one of the nuclei which arise from the originally single nucleus of the pollen-grain. It would take us beyond our present scope to show how Guignard and others have made the parallelism even closer by comparing the preparatory or maturation processes which precede fertilization in plants and animals alike.

Sexuality of Cryptogams.

After the sexuality of Phanerogams had been securely established (1846), attention was turned with fresh confidence to the Cryptogams, in regard to which some important observations had already been made. Thus the antheridia and archegonia of mosses had been compared to stamens and ovaries by Schmidel and Hedwig, and the spermatozoids had been discovered and recognized as such by Unger in 1837. Similar observations had been made by Nägeli (1844) and others in regard to the prothallia of ferns. But there was necessarily great obscurity until Hofmeister discovered the alternation of generations (1849), and showed that "the prothallium in the vascular cryptogams is the morphological equivalent of the leaf-bearing moss-plant, while the leafy plant of a fern, of a Lycopodium and a rhizocarp answers to the capsule of the moss". As yet, however, no one had observed the actual union of the male and female sex-elements in Cryptogams, though many botanists had been on the threshold of this discovery. The observation was first made by Pringsheim in the common fresh-water alga *Œdogonium*, and the fact was immediately confirmed by De Bary.

Much has since been done (*a*) in extending the range