

concealed by husks as much as eleven lines in length, has been stated, but on insufficient evidence, to grow wild in Brazil. It is almost certain that the aboriginal form would have had its grains thus protected;⁵⁴ but the seeds of the Brazilian variety produce, as I hear from Professor Asa Gray, and as is stated in two published accounts, either common or husked maize; and it is not credible that a wild species, when first cultivated, should vary so quickly and in so great a degree.

Maize has varied in an extraordinary and conspicuous manner. Metzger,⁵⁵ who paid particular attention to the cultivation of this plant, makes twelve races (unter-art) with numerous sub-varieties; of the latter some are tolerably constant, others quite inconstant. The different races vary in height from 15-18 feet to only 16-18 inches, as in a dwarf variety described by Bonafous. The whole ear is variable in shape, being long and narrow, or short and thick, or branched. The ear in one variety is more than four times as long as in a dwarf kind. The seeds are arranged in the ear in from six to even twenty rows, or are placed irregularly. The seeds are coloured—white, pale-yellow, orange, red, violet, or elegantly streaked with black;⁵⁶ and in the same ear there are sometimes seeds of two colours. In a small collection I found that a single grain of one variety nearly equalled in weight seven grains of another variety. The shape of the seed varies greatly, being very flat, or nearly globular, or oval; broader than long, or longer than broad; without any point, or produced into a sharp tooth, and this tooth is sometimes recurved. One variety (the rugosa of Bonafous, and which is extensively cultivated in the United States as sweet corn) has its seeds curiously wrinkled, giving to the whole ear a singular appearance. Another variety (the cymosa of Bon.) carries its ears so crowded together that it is called *maïs à bouquet*. The seeds of some varieties contain much glucose instead of starch. Male flowers sometimes appear amongst the female flowers, and Mr. J. Scott has lately observed the rarer case of female flowers on a true male panicle, and likewise hermaphrodite flowers.⁵⁷ Azara describes⁵⁸ a variety in Paraguay the grains of which are very tender, and he states that several varieties are fitted for being cooked in various ways. The varieties also differ greatly in precocity, and have different powers of resisting dryness and the action of violent wind.⁵⁹ Some of the foregoing differences would certainly be considered of specific value with plants in a state of nature.

Le Comte Ré states that the grains of all the varieties which he

⁵⁴ Moquin-Tandon, 'Eléments de Tératologie,' 1841, p. 126.

⁵⁵ 'Die Getreidearten,' 1841, s. 208. I have modified a few of Metzger's statements in accordance with those made by Bonafous in his great work, 'Hist. Nat. du Maïs,' 1836.

⁵⁶ Godron 'De l'Espèce,' tom. II.

p. 80; Al. De Candolle, *ibid.*, p. 951.

⁵⁷ 'Transact. Bot. Soc. of Edinburgh,' vol. viii. p. 60.

⁵⁸ 'Voyages dans l'Amérique Méridionale,' tom. i. p. 147.

⁵⁹ Bonafous 'Hist. Nat. du Maïs,' p. 31.