

1. Indigenous races of maize.

1-1) An excursion to north-western Argentina, in 1952, (with the help of Dr. Vallegas, from Buenos Ayres [sic] and the authorities of the University of Tucuman), and subsequent studies of the material collected, resolved the relations between the Andean races, which evidently migrated from North to South in the high valleys, and the lowland races. Actually three very different groups of races met in this region, without becoming mixed to any appreciable degree: The Andean races, coming down from the north of the high valleys, the lowland races, also coming from the north of the Guarani tribes and a completely new group of races, found in the Calchaqui valley and which may have been cultivated by the Indian of this name (also called Diagueta) who are known to have had a considerable level of culture.

The Andean races found were the following: There seem to be, in the region of the Quebrada de Humahuaca, two main races: Capio a dented soft corn, with strongly pointed kernels owing to the formation of a beak by the base of the stigma, fairly large and conical ears with high row numbers. The color varies greatly (yellow, white, rosado (perhaps cherry) red (pericarp) and variegated, "carapato" (mottled aleurone)). Apparently there are no very strict distinctions between these races, and they are now pure for their color, though different Indian farmers may have preference for some colors. Amarillo de ocho a yellow corn, with eight rows, which are very salient, forming in transversal sections a very pronounced cross, cylindrical ears. A fair amount of intermingling must occur, and many intermediate ears between the two races were observed. Achilli has all the characteristics of an old synthetic from Capio and Amarillo de ocho.

Chulpi is a variant of Capio, carrying a sugary factor. The ears collected contained both starchy and flint kernels. The offspring from the former, when selfed should have yielded both pure starchy ears and others, with a segregation of 3 starchy, 1 sugary, but only the first were found in a total of 10 ears. The descendants of sugary kernels should only give sugary seeds, but the opposite occurred though some kernels still showed a sugary region at the tip of the kernels. It should however be remembered that we reported earlier results of crosses of Andean sweet corn, from Bolivia, with normal sugary (su su, chromosome 4). The ears of the descendants gave any proportion from nearly all sugary to nearly all starchy. It should also be mentioned, that both in the original Bolivian material and in descendants obtained in Piracicaba, the effect of the su-factor causes frequently a transparent region at the tip of the kernels. Chulpi thus contains a su-allele and many modifiers.

As far as color is concerned, Chulpi of Humahuaca is mostly of white color, though other colors may occur, just, [sic] as in Capio. Pisincho is the name for the pop corn of the valley, and its form may vary, from the irregular type of pointed pop corn, known to us from the Bolivian highlands, with a tendency to double kernels, to a slightly conical type with about 12 to 14 salient rows, somewhat similar to the Guarani pointed pop corn. The colors may vary, but white seems more frequent. Morocho is a peculiar white flint corn with fairly large kernels, numerous rows, short cylindrical or round ears. Bola seems related to this race, being only in all character

smaller. Culli is a peculiar type with black aleurone, but only a few ears were sampled. Culli, with almost black (pericarp) kernels and purple plant, used for obtaining an alcoholic drink, seems not to be a race, but a mixture of any representatives from any race giving this color combination. No sign of tunicate ears could be found, nor of any knowledge by the Indians regarding this type.

The so-called Altiplano-Type with its small, almost spherical ears, was not found with any of the farmers visited, not even at altitudes around or over 3.000 meters. One farmer, (altitude around 2.000m) had bought several sacks of maize, which contained a fair amount of ears of the altiplano type) which however he called "degenerated corn". Since we know that this altiplano type really exists, at least from Bolivia, it should be interesting to find out with more accuracy in what special localities, altitudes or exposures it is cultivated.

The Calchaqui races are all flinty. The most common type is a very hard white flint corn. There are still two other races, one yellow and the other white, with smaller kernels and ears.

The Guarani races are the same as described under (1-3) for Paraguay. It seems, however, probable that the Guarani white flint came originally from the Calchaqui, since this race is lacking among the Guaranis of Brasil and Bolivia, occurring only in Paraguay, and in Brasil to some extent as an old cultivated form ("Cristal").

In the lowlands around the Parana and LaPlata, there are now four main types or races: Cuarenton, and hard orange flint corn, with small cylindrical ears and very tightly packed kernels; this race is rather early. Amarillo a large grained yellow to orange flint, with large and generally cylindrical ears. Canario de ocho is a rather peculiar eight rowed hard flint) with large kernels of a canary-yellow color (there is no evidence of any relations to the Canary Islands, though there is some unfounded popular belief among the farmers). Pisincalla is the name, given to all pop corns, and also to the typical argentinian pop, with very small, generally red kernels, round on very small ears which may be cylindrical or almost spherical.