

## 41316 to 41341—Continued. (Quoted notes by Mr. O. F. Cook.)

the *papaya*. The trees grow with great rapidity and are extremely prolific. It is known that superior varieties can be propagated asexually, both by budding and by rooted cuttings."

See Circular No. 119, Bureau of Plant Industry, for methods of propagation.

41340. *CHENOPODIUM QUINOA* Willd. Chenopodiaceæ. Quinoa.

"(No. 2154. Cuzco, Peru, July 27, 1915.) Seeds of a large pigweed extensively cultivated in the high plateaus of Peru. The seeds are eaten prepared in various ways, but the principal use is for making a kind of *chicha*, or native beer. Before the introduction of barley and wheat from Spain, *quinoa* and *cañihua* were probably the only seed crops grown in the more elevated parts of Peru. Potatoes are always the principal crop, with *quinoa* and *cañihua* next, following with the other tubers, *oca*, *anyu*, and *ullucu*. *Quinoa* presents many color variations in the plants as well as in the seeds, especially in the direction of reds and purples. The colored seeds are used almost exclusively for making *chicha*, the white seeds being preferred for eating. A possibility of utilizing the *quinoa* in the United States lies in its use as a breakfast food. Some pronounce it as good as oatmeal, and one resident Scotchman even insisted that it was better. From a crop standpoint, too, the plant appears rather promising, being very vigorous and productive. It is of erect habit, has a strong central stalk, and forms compact heads, heavy with seed. There is no reason why it should not be gathered and thrashed by machinery."

For an illustration of the quinoa, see Plate V.

41341. *CYPHOMANDRA CALYCINA* Sendt. Solanaceæ. Tree tomato.

"(No. 2058. Seeds from Ollantaytambo, Peru, July 29, 1915.) The plant attains a height of 4 to 5 feet with a single erect central stalk and spreading horizontal branches like a small, flat-topped tree. The leaves are entirely different from those of the tomato, being simple, entire, and broadly oval. The surface of the leaves, as well as the petioles and branches, is covered with a very short, minute, soft, velvety pubescence. The method of branching is peculiar, as there appear to be two leaves on some of the joints, those above the inflorescence, while the other internodes have a single leaf. The buds are tinged with purplish pink, but the mature flowers are nearly white. The fruits have a pointed oval or fusiform shape and are borne in pendent clusters from near the ends of the branches. The largest fruits found in the market of Cuzco measured 7 by 5 cm. The largest diameter is somewhat below the middle of the fruit, the end being more pointed than the base. The colors are Brazil red on the more exposed surfaces and cadmium orange on the lighter parts, with many intermediate shades either in solid color or finely mottled. The skin is thicker and tougher than that of the tomato and the outer layer of flesh firmer. The placenta is large and fleshy, completely filling the interior of the fruit, the seeds being confined mostly to a narrow zone between the outer walls and the placenta. The freshly cut fruit has a pronounced odor, as strong or stronger than that of the tomato, but of a somewhat different quality. The taste, while much nearer to that of the tomato than to any other fruit, is distinctly different. Some might find it more pleasant and others not. In any event the fruit is distinctly edible, and the plant laden with its fruits is curious enough to be grown for its own sake and to allow the possibilities of the fruit to be tested. The habits