

too much faith in a miraculous Providence when one is attempting to study the march of events.

"One thing is certain: the smaller languages and dialects will die off more and more quickly. The time has passed when a ridge of mountains, a river, or a valley can separate two towns and permit their inhabitants to speak different dialects. It was in that way that provincial Latin degenerated into the various Romance languages. To-day, however, steam navigation, printing, railroads, postal and telegraphic service are enough to accentuate or maintain uniformity of language within each nation and within its

colonies or within the colonies which it once held. This process by which many local dialects fuse into a single language which for one reason or another reaches a position of preëminence and becomes the national language will tend to repeat itself in the broader field of world languages. For the means of communication mentioned above are now augmented by aviation, motion pictures, and the wireless telephone, and not only do rivers and valleys offer no obstacles to communication, but even the highest mountain ranges and the broadest oceans have been overcome."

this material a plant has been raised in Manila that promises to become the progenitor of a new race that will grow in the hot low-lands. Aside from its value from the fruits it is believed that the chayote could be grown and used as an asparagus substitute.

Other useful plants recommended for introduction into the Philippines include the following species:

The ONIBASU, *Euryale ferox*, is an ornamental perennial spiny aquatic herb ranging from northern India to China and Japan. It is closely related to the lotus and the water lily. The leaves are round, from 30 to more than 100 cm. across, dark green above and purplish and spiny beneath. The flowers are about 5 cm. across, and in color vary from red to blue and purple. The round fruit attains a diameter of from 5 to 10 cm., and contains 8 to 20 large seeds, sometimes as big as cherries, embedded in a fleshy pulp. These are gathered and roasted and eaten like those of the lotus. In China the onibasus is said to have been in cultivation for some 3000 years. It has been introduced into America and Europe, where it is grown as an ornamental.

The SWISS CHARD, *Beta vulgaris cicla*, is a biennial herb 50 cm. tall or more, probably derived from a plant found wild along the coasts of southern Europe. The leaves are large, dark green, tender, and fleshy, and make excellent spinach. The stalks are thick, fleshy and tender, and may be used as a substitute for asparagus. The chard has been introduced into the Philippines, and it has been demonstrated that it thrives at all seasons, both at sea-level and in the mountain regions. As yet it is practically unknown, but is certain to be extensively cultivated as soon as it becomes better known. The seeds should be sown thinly in rows about 25 cm. apart, and thinned and transplanted to about 20 cm. apart in the row. Seeds may be purchased from most dealers in garden seeds, but are sold under various names, like Chard, Leaf Beet and Silver Beet.

The IRONO, *Geitonoplectis cymosum*, is a rather large leafy climber native of Eastern Australia

Useful Plants in Foreign Lands

By P. J. WESTER

This is the third article in a series on this subject by Mr. Wester. The next will appear in an early issue.—ED.

Rice, the most important crop in the Philippines, is probably a native of India or Indo-China, whence it has spread to all countries suited to its cultivation and has become one of the food staples of the world. It was firmly established in Babylonia some time before Alexander made it a part of his empire, according to Delandolle, and reached Syria about the beginning of the Christian Era. Thence it spread to Egypt, and finally reached Italy in 1468. Long before the Arabs had carried it into the Iberian peninsula. Prior to the close of the seventeenth century it was already established in the New World (in South Carolina).

When and by whom rice was introduced into the Philippines will always remain unknown. Since it was in cultivation in China more than 2800 years B. C., we may be sure that it is also of very ancient introduction into the Philippines, where it has become the most important crop as well as the staff of life of the people. With an area of 1,785,000 hectares planted to rice, yielding 2,200,000 metric tons, valued at P183,300,000 in 1928, this is about as strong an argument in favor of plant introduction as I know of. I am

the last to begrudge the *unknown soldier* his monument, but what of the unknown human benefactors who have helped to carry rice around the world?

The *chayote* is one of the latest examples of successful plant introduction into the Philippines. About half a dozen fruits of this excellent vegetable were received by the writer from the Office of Foreign Plant Introduction, Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D.C., in 1920. As an insurance against accidents they were divided into two lots, one of which was sent to the forestry nursery in Baguio, while the other was mailed to James A. Wright, then the principal of the Trinidad agricultural school. Both were successful in propagating the chayote, which now is common in Baguio and has already become disseminated to a considerable extent into other parts of the Philippines, and in time may be expected to become a standard vegetable wherever it can be grown. Already it is being shipped from Baguio and marketed in Manila.

The ordinary chayote does not thrive at sea-level, and does the best at elevations above 450 meters. But a few months ago I received from O. W. Barrett in Porto Rico, four chayotes of a variety reported to do well at sea-level. From

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from Victoria to Queensland. The leaves are linear to lanceolate-oblong. The small flowers are borne in loose terminal clusters, followed by small dark blue fruits. The tender shoots make a fair substitute for asparagus, to which the itono is related.

The *JATOPA*, *Hymenaea courbaril*, is a large spreading tree, often 30 meters high, ranging throughout tropical America at low and medium altitudes. The leaves have two leaflets, obliquely ovate to oblong, thick and leathery, up to 10 cm. long. The large flowers are whitish to purplish, and are followed by rough brown pods, 5 to 10 cm. long to 45 mm. broad, somewhat flattened, and contain usually 2 large seeds embedded in a dry mealy sweet edible pulp. The tree does best in sandy loam. It yields excellent timber and is related to the *ipil* and *narra*.

The *PECIGO*, *Chytranthus manni*, is a small tree of a palm-like aspect about 5 meters tall, a native of Angola and San Tomé in tropical West Africa below 700 meters altitude. The large pinnate leaves are 90 to 120 cm. long, with 5 to 7 pairs of leaflets 25 to 45 cm. long and 7 to 10 cm. broad. The leafstalk is often more than 30 cm. in length. The flowers are borne in dense oblong clusters growing from the old wood. The edible fruits are 3-lobed, shorter than broad, about 5 cm. across, with a wrinkled leathery reddish-brown shell. It is related to the Chinese litchi.

The *OTY-CORO*, *Couepia rufa*, is a handsome large tree up to 20 meters high, ranging from Pernambuco to Amazonas, Brazil. The leaves are oblong, 17 to 27 cm. long, thick and leathery, glossy above and reddish-velvety beneath. The flowers are borne in terminal clusters. The fruit is irregularly roundish to roundish-oblong, wrinkled, 12 cm. in diameter, with bright yellow edible much appreciated flesh. It is related to the apple.

The *KELANGO*, *Fusanus acuminatus*, is a tall shrub to a tree 9 meters high, ranging over the greater part of Australia, Queensland excepted. The leaves are opposite, lanceolate and leathery, usually to 8 cm. long. The flowers are produced in great profusion, and are assembled in small terminal clusters. The fruits are round, about 2 cm. across and one-seeded. The flesh makes excellent jelly and preserves, and may be sundried and stored like apples. The seeds also are of good eating quality.

The *NYTIA*, *Conyza aegyptiaca*, is an annual or biennial herb related to lettuce, a native of tropical Africa. The leaves are linear-oblong to oblong-spatulate, coarsely toothed or pinnatifid, 5 to 10 cm. long. The flowers are yellowish. In lower Kongo Belge the leaves are marketed as a vegetable.

The *CHAMBURO*, *Carica candamarcensis*, is a small semi-herbaceous tree to 6 meters high, a native of the highlands of Colombia and Ecuador. In appearance it strongly resembles the papaya, a close relative, from which it differs in climatic requirements, growing at elevations ranging from about 1800 to 3000 meters. The fruit is 7 to 10 cm. long, ellipsoid and pointed, with 5 well marked grooves, deep orange yellow, with sub-acid and aromatic flesh about a centimeter thick, forming a cavity containing many seeds embedded in gelatinous edible pulp. The flesh is too acid to eat raw, but is excellent cooked with sugar or made into jam or preserves. The chamburo is commonly cultivated in Ecuador and Colombia, and was introduced into the highlands of Ceylon 30 years ago where it is commonly grown, and whence seeds were procured by the writer some months ago for planting in Baguio, where it is hoped it will prove a successful addition to the few fruits thriving there.

The *PIRANGA*, *Baciris piranga*, is a small, handsome spiny, almost stemless palm, a native of the States of Para and Amazonas, Brazil. The leaves are pinnate, up to 150 cm. long, the fruits are ovoid and smooth, 15 cm. long, and have reddish subacid pulp highly esteemed for food, ripening in February.

The *PALILLO*, *Campomanesia lineatifolia*, is a small tree about 3.5 meters tall, a native of eastern Peru to Amazonas, Brazil, in moist regions. The leaves are ovate to ovate-oblong and long-pointed, 7 to 13 cm. long and about half as wide, hairy beneath. The fragrant white flowers are

borne singly. The fruits are round and yellow, 4 cm. across. They taste like guavas to which the plant is related and are used like them. The tree is cultivated in Peru.

The *CORACARE*, *Cereus coracare*, is a spiny leafless cactus found in Paraguay. The fruit is the size and shape of an apple, and is of excellent taste.


The *TASAJO*, *Hylocereus undatus*, is a climbing or trailing leafless cactus with 3-winged practically spineless stems, widely disseminated in the tropics and subtropics as an ornamental. The handsome white flowers are 20 cm. long or more, and open at night. The red, edible fruit is oblong, 10 cm. long, covered with large scales. A variety of this species was long ago introduced in the Philippines, but it rarely bears fruits, and is of no economic importance. In Jamaica the flower buds are eaten in soups like okra to which they are reported equal if not superior as a vegetable. Two varieties grow in Yucatan whose fruits are considered among the best in that country. The *Chacoub*, distinguished by the purple edges and tips of the perianth segments and the globose reddish purple fruit; and the *Zaccoub*, which is distinguished by its creamy white fruit.

BEWARE OF THIS ELEMENT WO!

At the Rochester meeting somebody said that the job of the safety man in the chemical industry is a tough one because new elements and new compounds are constantly being discovered. He advised that it was the safety man's job to become familiar immediately with the physical and chemical properties of all such new substances. Our contemporary The Syracuse *Chemist* has recently reported a new element No. 93 *Woman*. Symbol *Wo*, a member of the human family. This new element has the following properties:

Occurrence:—Is abundant in nature; found both free and combined, usually associated with men.

Physical Properties:—A number of allotropic forms have been observed. Their density, transparency, hardness, color, boiling and melting points vary within wide limits. The color exhibited by many specimens is a surface phenomenon and is usually due to a more or less closely-adhering powder. It has been found that an unpolished specimen tends to turn green in the presence of a highly-polished one. The boiling point for some varieties is quite low, while others are likely to freeze at any moment. All



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varieties melt under proper treatment. The taste varies from sweet to very bitter, depending upon environment and treatment.

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