

(well-irrigated), *sadiram*, *siragu sadukkam*, *padagai*, etc. One general rule observed in the supply of water was that fields, whatever their situation might be with reference to the main channels, were to take the water in the manner that it flowed, *i.e.* in its natural course, without causing any special obstructions or creating contrivances for preferential supply or prior utilisation. Such obstructions were punished, generally with a fine. Mr. K. V. S. Iyer refers to the Kuruvitturai inscriptions of the time of Jatavarmon Srivallabha, a Pandya king of the latter half of the twelfth century, which refer to canals and water courses which existed at the time; one of them refers to the opening of a new channel, called *Parakrama Pandyan-kal*, which had to be closed owing to an objection raised that it was cut just above a main canal. Private individuals who benefited the community by cutting tanks and channels, got as reward gifts of tax-free lands and other concessions. "While some of these were undertaken to secure merit for the dead, others were taken up for the benefit of the public." A record of Hoskote tells us that all lands watered by a newly constructed tank were to be enjoyed as *sarvamanya* for the first two years, and then alone were to be made to pay taxes. A Hoysala inscription, of A. D. 1331, declares that the land watered by a private tank, just dug, should be enjoyed as permanent *sarvamanya*. Instances of this kind might be multiplied, to show that care for irrigation was operative even in the communal mind.—(From *The Young Men of India*, March 1925)".

(To be continued.)

Future of Subtropical Fruits.

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The list of fruits and nuts on the market during the year, from which the American housewife may select in accordance with the tastes and requirements of her family, is already a long and imposing one. Largest in numbers at least, as well as in extent of varieties, are the customary fruits of the temperate zones, the apple, pear, peach, plum, small fruits, berries and a host of others, according to season. But there are also ranged there before her in tempting array the inevitable fruits of the tropics to which she has long been accustomed, the pineapple, coconut, and the banana, practically always in season and decades ago established in the favor of the American consumer. The display would not be complete, however, without the orange, lemon, and grapefruit, the almond and walnut, and many others, contributions for her basket from the sub-tropics.

Of the fruits of the temperate zones, there are probably but few still to be exploited and made possible competitors for her favor. The

list bids fair to be greatly extended in the next half century, however, by additions from the tropical and subtropical fruits, the former furnished chiefly by Mexico and Central America, the latter to some extent by Florida and the Gulf Coast states, but principally by California and Arizona.

What Is a Subtropical Fruit?

On the basis of their climatic adaptations, all the fruits and nuts are grouped into three general classes: the tropical fruits, those of a subtropical character, and those of the temperate zones.

Among the common representatives of the tropical fruits are those already mentioned, the pineapple, coconut, and banana, although there are dozens more much less well known and appreciated. The tropical fruits normally occur in the tropics and are not able to withstand temperatures of below 40 degrees Fahrenheit at any time during the year. Obviously, tropical fruit culture in the United States is decidedly limited in extent, being in fact practically confined to the southern end of Florida.

The subtropical fruits are somewhat hardier than the truly tropical fruits although not sufficiently so to successfully withstand the rigors of the temperate zones. In general they may be said to thrive only where the temperature rarely if ever drops below 20 degrees Fahrenheit and some of them are severely injured at such temperatures. Among the better known of the subtropical fruits are those already mentioned, the citrus fruits, English walnut, almond, and many others of great importance, including the fig, olive, and date.

Fruits of Temperate Zone

The fruits of the temperate zones are so well known as not to require enumeration. They are much hardier than all other fruits and some of them when dormant commonly successfully survive temperatures many degrees below zero.

The subtropical fruits exhibit a much wider range of variations than the fruits of the temperate zones, not only the character of the fruit, and in hardiness but in other features as well. Some are evergreens, as the avocado, olive, loquat, and citrus fruits. Others are deciduous, and shed the leaves in the fall. Still others, like the cherimoya are partially deciduous but shed the leaves in the spring. On the basis of hardiness to low temperatures, in early spring or in late fall, the almond being one of the principal examples of the former, and the fig and walnut examples of the latter. Some of them require an unusual amount of summer heat in order to produce fruit although they may grow well in cooler localities.

Two outstanding representatives of this group are the date and the olive. A few, such as the loquate, bloom during the winter season and are therefore quite easily injured by low temperatures.

Most of the tropical fruits require relatively high atmospheric humidity for commercial fruit production as illustrated by the pineapple and banana. By far the greater part of the subtropical fruits, however, do especially well under arid conditions, providing irrigation is possible and temperature relations satisfactory.

Where the Subtropical Fruits are Grown.

This subtropical fruit belt of the United States begins in the Carolinas and extends along the Gulf coast from Florida to Texas, takes in northern Mexico and reappears in Arizona and Southern California, extending northward and ending in Southern Oregon. It is interesting to note that subtropical fruit culture is being conducted successfully in California at latitudes approximating those of Washington, D. C., and even farther north. This is due principally to the ameliorating effect of the so-called Japanese current, which passes up the California coast, and to the protection against the climatic conditions of the Rocky Mountain region afforded by the Sierra Nevada Mountains which, extending almost due north and south along the eastern border of California rather effectively shut out the cold storms from the east. The Gulf Coast belt is of a humid character, permitting the growth there in a small way of certain tropical fruits, including the pineapple and banana, which cannot be grown successfully in California. The absence of atmospheric humidity and an abundant supply of irrigation water however, makes possible here the production of a goodly number of subtropical fruits which cannot be successfully grown elsewhere in the United States, an advantage already recognized, but an opportunity not yet sufficiently realized.

What are the Subtropical Fruits ?

The list of subtropical fruits is rather a long one and includes many not known to any great extent elsewhere in the United States. By far the most important members of the group are the much appreciated citrus fruits, the orange, lemon, and to a limited extent only, the grapefruit, these also being grown rather extensively in the Gulf Coast states, with the exception of the lemon, which is produced exclusively in California. The nutritious English or Persian walnut and the almond are two subtropical nuts grown here extensively and almost exclusively. Others of commercial importance are the healthful fig, the olive, the avocado or alligator pear, a salad fruit from the tropics, the thirst assuaging pomegranate, the date and the luscious Oriental or Japanese persimmon.

Subtropical fruits of minor importance grown in California include the sprightly loquat, sometimes known as the Japanese Medlar, the fragrant feijoa or pineapple guava, the true guavas, the expensive pistachio nut, the tuna or prickly pear, the attractive jujube or Chinese date, the delicate cherimoya or custard apple, the mango, the edible Passion fruit or grenadilla, the white sapote, and a host of others found only occasionally.

What Do the Subtropical Fruits Mean to California ?

At the present time there are more than 250,000 acres planted to the citrus fruits in California; 100,000 acres to the English walnut; 65,000 acres to the fig; 50,000 acres to the almond 40,000 acres to the olive; between 1500 and 2000 acres respectively to the avocado and pomegranate; 1000 to 1500 acres to the date, and 500 acres to the persimmon. The annual return from these crops is approximately \$100,000,000. The growing of these fruits and nuts constitutes a source of livelihood for more than 100,000 persons.

Of High Food Value

The subtropical fruits and nuts as a group contain the most delicious and nutritive fruits known in this respect far exceeding the fruits of the temperate zones. Thus in sugar content the date, fig and persimmon stand unequalled. The peculiar dietetic value of the citrus fruits is well known and constitutes an important reason for their extensive use in the dietary of the infant and adult as well. The avocado and the olive are higher in fat and oil content than any other fruits and consequently possess unusual nutritive values. The walnut and almond have long been recognized as among the most efficient meat substitutes known. In delicateness of flavour few fruits can compare with the pineapple and the cherimoya, by general consent regarded as two of the most delicious fruits in the world.

Thrilling Stories of Adventure.

The narrative of the search for the best varieties of these fruits and of their successful establishment in the United States constitutes a series of tales of thrilling adventure on the part of the intrepid plant explorers of the United States Department of Agriculture, excursion into the remote parts of the world, inaccessible tropical jungles and mountain heights fraught with constant dangers and hardships, not infrequently resulting in loss of life itself, all that the American consumer may have the best that the world affords in the way of fruits and nuts. The stories of the successful establishment of the date industry and of many others constitute thrilling epics of stoical devotion to the ideal of an American standard of living and eating second to none.

The Future.

With hundreds of thousands of acres of excellent soils, much of it either under irrigation or possible to develop water supplies for, and with climatic conditions unexcelled for the culture of a wide variety of subtropical fruits for which ample market demand can readily be created in the consuming centres of this country, and with little possibility of serious competition, the future for subtropical horticulture in California is assured. The progress of the past half century has been truly marvellous. When John Wolfskill in 1877 shipped the first carload of oranges from California to St. Louis he little dreamed that within fifty years it would be multiplied to an annual total of more than 50,000 cars of citrus fruits. And what has been done with the citrus fruits will undoubtedly be done in the future with walnut, fig, avocado and date, not to mention many others which will undoubtedly rapidly increase in importance. It appears likely that much of the acreage in California now planted to fruits of the temperate zones will gradually be replaced by subtropical fruits and nuts.

Incomes From Agriculture.

Taxation advocated. Giving evidence recently before the Indian Taxation Committee, Mr. J. P. Neogy, Lecturer in Economics, Calcutta University, urged that agricultural incomes in permanently settled areas should be made liable to income tax.

In the course of his evidence, Mr. Neogy said :—

“There does not seem to exist any economic justification for the exemption of agricultural incomes from the payment of income-tax in permanently settled areas. In these areas the land revenue, being a fixed charge on the rent, has long ceased to be a tax. For, the land revenue is taken into account by every intending purchaser and allowance is made for it in the purchase price. The land revenue has become completely amortized or capitalized, and with regard to this tax it may fittingly be said, that an old tax is no tax. Where lands have not changed hands by the process of sale and have passed only by inheritance, their capital value and income have increased. This increase may generally be attributed to the growth of population rise of prices or other causes unconnected with any deliberate or conscious effort on the part of the recipients of such income. The increased income from the lands in the permanently settled areas may be described as a ‘surplus’ in the sense that it is not required or considered essential to sustain any economic effort.”

Referring to the above, the Maharaja of Burdwan and Sir Percy Thompson pointed out that in 1793 and subsequently, the Govern-