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Dr. Yamei Kin, the Only Chinese Woman with a Physician's Diploma from an American College.

NO less a personage than Browning sang of the bean, and Dr. Yamei Kin, the only Chinese woman graduate of an American medical college, made it the burden of her good-bye song on the day she left New York a few days ago for the Orient to gather data on that humble but nutritious food for the Department of Agriculture at Washington. The call for sustaining food is imperious; the cuisine of China is one of the toothsome cuisines of the world. These facts, coupled with Dr. Kin's departure, make an illuminating paragraph on the subject of feeding ourselves and our allies. Also, of more than sentimental interest is the circumstance that the appointment of Dr. Kin marks the first time the United States Government has given so much authority to a Chinese. That it is a woman in whom such extraordinary confidence is now reposed detracts nothing from the interest of the story.

China has given the world many things. Paper was manufactured in China in the third century. If Europe had enjoyed communication with China it would have learned of printing many centuries before it did. In China, also, gunpowder was first invented. This same astonishing race produced the mariner's compass in the fourth century, porcelain in the third, chess and playing cards in the twelfth, and silk embroideries in almost prehistoric times. And now Dr. Kin is going to see if her native land can teach the United States how to develop a taste for the soy bean in its numerous disguises. For about 4,000 years the Chinese have been practically self-supporting from the productions of their own soil. The price of porterhouse steak has never bothered them appreciably, but what they don't know about possible variations in the treatment of beans we could learn over night.

"The world is in need of tissue-building foods," said Dr. Kin, "and cannot very well afford to wait to grow animals in order to obtain the necessary percentage of protein. Waiting for an animal to become big enough to eat is a long proposition.—First you feed grain to a cow, and, finally, you get a return in protein from milk and meat. A terribly high percentage of the energy is lost in transit from grain to cow to a

human being. Roughly speaking, the process is not unlike the loss of heat units in coal burned in a locomotive before the wheels go round.

"All grains contain a certain percentage of protein, but all beans contain a very great proportion of protein. The statement is frequently made that the Orientals live almost exclusively upon rice, eating little meat. It is not generally known, perhaps, that deficiency in protein is made up by the consumption of large quantities of products of the soy bean, which take the place in our dietary of meat and other costly nitrogenous foods. They are eaten in some form by rich and poor at almost every meal. Instead of taking the long and expensive method of feeding grain to an animal until the animal is ready to be killed and eaten, in China we take a short cut by eating the soy bean, which is protein, meat, and milk in itself. We do not eat the plain bean in China at all. It is never eaten there as a vegetable, but in the complex food products—natto, tofu, miso, yuba, shoyu, and similar dishes.

"The chief reason why people can live so cheaply in China and yet produce for that nation a man power so tremendous that this country must pass an Exclusion act against them is that they eat beans instead of meat; but nothing like the navy bean, which by many people who do not get much exercise is considered a rather heavy food. Furthermore, pork and beans as fed to the men in the United States Army and Navy become monotonous after awhile, even though the addition of the carbon contained in the shape of pork fat makes such a meal possess every element necessary to sustain life.

"But human nature is about the same everywhere, and the Chinese don't care for a monotonous bean diet any more than other people. So they have taken this soy bean and managed to invent a great many kinds of products. The bean curd is a food made from pulverizing the beans into a flour and then boiling this milklike concoction, letting the curd rise to the top as your grandmothers in this country made cottage cheese. I spoke of tofu—this is it. Nothing is wasted, nothing lost in China. Most of these soy bean products, popular from ancient times, are fermented. The cell walls and other carbohydrate materials are broken down, the cell contents rendered more readily digestible, and peculiar and pleasant flavors developed.

"Soup noodles are made out of bean curd. Entrées made of bean curd are

Woman Off to China as Government Agent to Study Soy Bean

Dr. Kin Will Make Report for United States on the Most Useful Food of Her Native Land

served with cream mushroom sauce or a hot Spanish tomato sauce. A salad of bean sprouts, accompanied by cheese—the cheese a cross between Camembert and Roquefort, and made from the soy bean—is very nutritious and palatable. Americans do not know how to use the soy bean. It must be made attractive or they will not take to it. It must taste good. That can be done. We make from it a delightful chocolate pudding. A black soy bean sauce we use as a foundation for sweetmeats in China. The soy bean contains practically no starch, which means that it is a most desirable food for diabetics, and also, of course, for vegetarians. Buddhists kill no animals—they thrive by making a specialty of the soy bean, which, by the way, is already being used in the French Army. They find there that soy bean mixed with flour makes a good cracker, more nourishing than any other cracker.

"In some things we Chinese have far outstripped you. We have vast areas of swamps, and we have made them wonderful in their productive power. The first requisite of life is food, which, throughout the same zone all over the world, is practically the same. You have vast areas of swamp lands and permit them to lie waste." We are showing the United States, right now, how it can make semi-arid regions yield. I came here once for the particular purpose of getting American corn with which I hoped we might improve the Chinese corn. I found it not much better than our own.

"The soy bean thrives best under conditions favorable to corn culture, and on soils of medium texture well supplied with potash, phosphoric acid, and lime; also it gives good returns on light, poor soils. If planted for hay or fodder, the seed is sown broadcast or closely in drills in the Spring when the soil is thoroughly warmed; if for the beans, in drills about three feet apart and cultivated like corn. Soy bean hay cut in season and well cured has a high feeding value. The seed, being a concentrated feed, is usually ground and mixed with other fodder. Fed alone or with other materials the meal is quite thoroughly digested; experiments with sheep showed that 91 per cent. of the protein and 84 per cent. of the total organic matter was assimilated. Similar values of the seed were 87 and 85 per cent. The seed is also an important source of oil, and the seed cake, a by-product in making oil, is a valuable feeding stuff. The name 'soy' is from the Japanese word 'shoyu,' a food prepared from the seeds.

"A soy bean patch, therefore, is one of the best things in the world today for all concerned. The conditions brought about by the war have upset the old contention that the work of food production cannot go beyond a certain point. High prices to the farmer for his products are usually caused by small crops. It has been argued, under ordinary conditions of peace, that, however desirable increased production of farms may be from the consumer's point of view, it did not follow that such increased production would result in an increase in the cash income per farm. As the theme was embroidered, the farmer appeared to have no incentive to scientific crop increase, for that would mean merely a lowering of the price at which he would sell.

"I should say that the plain man who now raises soy beans will come into his own. Farmers are the last persons to take their place in the modern world of organized industry. In so far as agriculture is a specialized branch, overproduction in it is temporarily possible. But viewing it as a whole, the vast range of agricultural products, and the fact

that other industries so intimately depend upon them, make it difficult to conceive of overproduction on the American farm.

"America can help China in teaching her the use of machinery, and we can help America by teaching her the value of the ground that your splendidly efficient farming implements cultivate. Many persons here think chiefly of coolies when they think at all of the Chinese people. It would not be fair for intelligent persons in China to believe that America's bill of fare was made up exclusively of the dishes set before the mountaineers of Eastern Kentucky. Chinese are fond of eating, and devote much attention to doing it well.

"All the cereal and vegetable productions known in Canada, the United States, or Mexico, and many that those countries do not know, are found in China. Barley, wheat, buckwheat, and maize are cultivated in the northern part. Every variety of soil and climate, in every degree of altitude, are to be found within the boundaries of China—from the heated swamps below the sea level to the regions of everlasting frosts beyond the snow line; and in these varied climates everything for the comfort of man can be produced.

"The Chinese do not know what worn-out soil is. Some places are so fertile and are cultivated with so much care and skill that three or four crops a year are regularly gathered. When the first crop is well along, the second is sowed, or planted, in the intervals between the ridges, and it is very common to see two crops in the same field at the same time. Villages, valleys, and plains are carefully cultivated, irrigated, and fertilized; hills and mountains are terraced, and every square foot of ground that can be made productive is brought into use. The Chinese have a passion for fertilizing the soil, and this is carried to great extremes, anything and everything being used for the purpose. Even barbers save the shavings and croppings of hair to sell to farmers for enrichment of the soil.

"It is rather tautological to point out that the Chinese farmer is nervous about his crop, but his margin of profit is so small that he cannot afford to lose. He binds several stalks of rice together to give mutual support against the winds, he arranges his little sticks, with 'charmed' strings attached to frighten the birds away, and each field has such a scarecrow as would frighten off any crow that ever lived. He watches the weather, and when it is too hot and dry he covers up his plants and irrigates the land; he raises water from one reservoir to another, and by means of bamboo pipes runs it about his fields—even up the mountain's sides. Archimedes screw-pumps, chain pumps, and bucket water-wheels are his implements—his feet supply the power."

Dr. Kin is a graduate of the Woman's Medical College of New York, and her great interests have been always domestic sanitation, civic hygiene, the conservation of life, and questions of nutrition. She is the head of the Imperial Peiyang Woman's Medical School and Hospital, near Peking, which sends out district nurses to Chinese slums to teach the people right living and ways of keeping well. The Imperial Infant Asylum in Tien-tsin, the Widows' Home, and the Girls' Refuge all come under her supervision as head of the woman's hospital work of Northern China. She will return to this country in October, bringing to our Government the detailed results of her study of the uses of the soy bean as a foodstuff needed by this country and by the world in the campaign of food raising and conservation.