



UNITED STATES DEPARTMENT OF AGRICULTURE,  
BUREAU OF PLANT INDUSTRY,  
OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION.

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BULLETIN OF FOREIGN PLANT INTRODUCTIONS.

January 1 to 31, 1912.

NEW PLANT IMMIGRANTS.

(NOTE: Application for material listed in this bulletin may be made at any time to this Office. As they are received they are filed, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it, as well as to others selected because of their special fitness to experiment with the particular plants imported.)

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders and others interested.)

GENERA REPRESENTED IN THIS NUMBER.

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PLATE: Larix Siberica, Siberian larch.

AMYGDALUS DAVIDIANA X A. NANA. (Amygdalaceae.) 32662. Cuttings from Kozlov Tambov government, Russia. "An Amygdalus, being a hybrid between *A. davidiana* and *A. nana*. Originated by Mr. I. V. Mijurin at Kozlov, with the idea of creating a perfectly hardy peach, able to withstand the severe climate of Central Russia. This hybrid produces nonedible fruits and has the characteristic growth of *A. davidiana*, while the form and looks of the fruits are more or less those of *A. nana*. Said to be very floriferous and extremely showy in spring-time. Possesses value as an ornamental tall shrub for the northern United States, and may serve as a hybridization factor in creating races of perfectly hardy peaches, as Mr. Mijurin's experiences were that while *A. davidiana* and *A. nana* do not hybridize with *A. persica*, this hybrid does." (Meyer's introduction.) For distribution later.

AMYGDALUS PERSICA. (Amygdalaceae.) 32372-380. Cuttings of nine varieties of Mexican peaches grown at the Government Experimental Farm, San Antonio, Tex., from seeds collected by Mr. G. Onderdonk in his investigation of the peach districts of Mexico, in 1902. Among these are forms ripening as early as June 20, others as late as September 3, some of South Chinese ancestry and others pure Spanish; several of considerable promise comparing very favorably with the Honey peach, said to be the best of the South Chinese peaches for the region of San Antonio. For distribution later.

BRASSICA JUNCEA. (Brassicaceae.) 32416. Mustard seeds from Sarepta, Saratoff government, Russia. "Seed of the famous Sarepta mustard, which is extraordinarily strong and which is in great favor throughout Russia. To possess the right pungency this mustard requires a rich, blackish soil, and a hot and dry summer, with nights not too warm. The region around Sarepta seems to supply such a desired climate. May possibly be grown to advantage in certain sections of eastern Oregon. Besides being ground into mustard powder, the seeds themselves are often eaten sprinkled over fried meats or mixed in sauces, and when used in this way they give dishes an agreeable spicy flavor. The oil expressed is not at all strong and is in very great demand in the region around Sarepta, for culinary purposes being much preferred to sunflower seed oil, as it is less adulterated. The summers in Sarepta are warm enough to ripen grapes in the open, the vines are buried deeply in the winter, however, and it may be that this short hot summer assists in making this mustard so strong, for the manager of a large mustard factory stated that seeds from Sarepta mustard grown in Tambov government, a region also with black soil, but only slightly cooler, do not possess the required strength.

Also Indian grown seed was not as fine as that cultivated near Sarepta. These seeds were obtained from the manager of the well known mustard factory of J. C. Glitsch, in Sarepta." (Meyer's introduction.) For distribution later.

*BROMELIA PINGUIN*. (Bromeliaceae.) 32382. Plants and seed from Tampico, Mexico. Presented by Mr. Clarence A. Miller, American consul. "Wild pineapple or Huapillo. This plant is very prolific in this section. In many places it covers thousands of acres making a thick jungle. The plant propagates from the seed and by starting suckers from the root or trunk. It flourishes in the lowlands or in the highlands. The plant is drowned out or destroyed if the land is flooded for a number of days. The leaves contain a fine quality of fiber. The fruit is used by the natives as a vermifuge. The plant itself is said to contain valuable chemical properties." (Miller.) For distribution later.

*CHRYSOBALANUS ICACO*. (Amygdalaceae.) 32402. Seeds of the icaco from San Salvador. Presented by Prof. A. S. Hitchcock, of this Bureau. "A common fruit sold in the markets and by street venders. Of various colors, especially a yellow and a purple variety." (Hitchcock.) For distribution later.

*CITRUS DECUMANA*. (Rutaceae.) 32397-398. Seeds of a pomelo from China. Presented by Mr. John M. Nixon, New York City. "The pomelo seeds were sent me by a missionary and are of the white and pink varieties of the celebrated Amoy product. The fruit is about the size and shape of our shaddock but without its dryness and bitter taste." (Nixon.) For distribution later.

*COCHLEARIA ARMORACIA*. (Brassicaceae.) 32660. Roots of horse-radish from Moscow, Russia. "A variety of horse-radish coming from Soosdal, Wladimir government, Russia, famous throughout the country for its fine qualities and said to be the best horse-radish in Europe. In special demand in Russia during the winter holidays." (Meyer's introduction.) For distribution later.

*CYDONIA SPP.* (Malaceae.) 32675-676. Cuttings of quinces from Kozlov, Tambov government, Russia. Two quinces selected by Mr. I. V. Mijurin at Kozlov, both medium sized, one with round, the other with oblong fruits. Both are able to "withstand successfully the severe climate of Central Russia, where quinces ordinarily perish when the thermometer drops to -20° Celsius (-4° F.). This variety has stood -35° Celsius (-31° F.) and remained unhurt." (Meyer's introduction.) For distribution later.

MEDICAGO SP. (Fabaceae.) 32410. Seeds of an alfalfa from near Sarepta, Saratov government, Russia. "An alfalfa of robust, almost erect growth, fit for dry situations. Is either a form of *M. falcata* or of *M. coerulea* which has been collected near Sarepta." (Meyer's introduction.) For distribution later.

MEDICAGO FALCATA. (Fabaceae.) 32389, 32409, 32411-412. Seeds of alfalfas from western Siberia, from near Sarepta, Saratov government, and from Krassny Koot, Samara government, Russia. "The 'sholteek', as this wild alfalfa is generally called in western Siberia, occurs over the greater part of Eurasia, being found in the Himalayas as low as the 30th degree of latitude and near Yakutsk and in Norway between the 60th and 70th parallels. There is a very great amount of variation to be observed in the wild plant; some forms grow up to be 5 to 6 feet tall and fairly erect, while others reach a height of a few inches only and are often of prostrate habit entirely. The more prostrate forms lend themselves excellently to naturalization purposes on dry pasture grounds, while the more erect varieties may be cultivated for forage purposes in sections of the United States where the ordinary alfalfa is winterkilled. The present habits of the 'sholteek' indicate that possibly a great amount of selection and breeding may have to be done before ideal types will have been evolved, but the many excellent qualities this plant possesses, viz., the eagerness with which all sorts of domestic animals devour it, the apparently great nutritive value, especially for milch-cows, its remarkable resistance to drought, to close grazing, and to adverse conditions in general, all seem to make it well worth while to spend some extra efforts on improvement. The roots of this 'sholteek' also possess the capacity of producing new plants whenever cut off or when exposed to the air, through the soil being washed away. This characteristic is of great value indeed in pasture grounds, where the crowns are easily damaged by the close grazing and by the hoofs of the animals tramping over them. The soil best suited to this *Medicago* seems to be a blackish well-drained earth, but one also finds it growing luxuriantly in pebbly banks, and in dry cliffs, composed of sandy loam." (Meyer's introductions.) For distribution later.

MEDICAGO SATIVA VARIA. (Fabaceae.) 32408. Seed of an alfalfa from Krassny Koot, Samara government, Russia. "A very strong-growing hybrid alfalfa, having heavy erect stems, which are well supplied with foliage. Obtained from Mr. W. S. Bogdan, at Krassny Koot, who is making extensive selection and hybridization experiments with *Medicago falcata* and who has

obtained a number of very promising types, some of which are fit to be raised for hay exclusively, while others lend themselves better to pasturing purposes. The climate around Krassny Koot is of a severe continental nature. The summers are hot and dry and the winters long and cold, with very little snow as a rule. The Medicagos selected there may prove suitable to the drier portions of the western United States especially. The plant from which these seeds came bears Mr. Bogdan's number 158 and is one of his best types." (Meyer's introduction.) For distribution later.

PHYTELEPHAS SP. (Phoeniceae.) 32369. Seeds of vegetable ivory from Panama. Presented by Mr. M. B. Shantz, Rochester, New York. Since the button manufacturers of Rochester alone use about 15 tons per week of these nuts, at \$60 to \$80 per ton, the plants grown from these seeds will be tested for the possibility of growing them in southern California or southern Florida. For distribution later.

PRUNUS SPP. (Amygdalaceae.) 32424, 32669-673. Seeds and cuttings of hybrid plums from Kozlov, Tambov government, Russia. Hybrids between *Prunus spinosa* and *Prunus domestica*, variety Green Reine Claude. All originated by Mr. I. V. Mijurin, and of varying degrees of value, most of them keeping and shipping well, as well as being very productive and very hardy. For distribution later.

PRUNUS ARMENIACA. (Amygdalaceae.) 32663. Cuttings of an apricot from Kozlov, Tambov government, Russia. "An apricot originated by Mr. I. V. Mijurin in Kozlov, said to bear large yellowish fruits of good flavor. Withstands unprotected the severe climate of central Russia and is probably the hardiest variety of apricot known on the globe." (Meyer's introduction.) For distribution later.

PRUNUS AVIUM. (Amygdalaceae.) 32674. Cuttings of a cherry from Kozlov, Tambov government, Russia. "A large-fruited variety of cherry, originated by Mr. I. V. Mijurin. Fruits large, of pale red color, fresh sour-sweet flavor, ripening toward the end of June. Possess excellent shipping and keeping qualities and persist on the trees even when overripe. Trees of vigorous straight growth, making but few side branches; trunks smooth and clean. This cherry seems to give special satisfaction in dry, cold climates like for instance in Samara government, where cherries as a rule grow very poorly." (Meyer's introduction.) For distribution later.

RIBES AUREUM. (Grossulariaceae.) 32667. Cuttings of a currant from Kozlov, Tambov government, Russia. "A variety of golden currant, said to bear large fruits of good sweet flavor, ranging in color from dark purple to pale yellow. Extremely hardy and thriving even on the poorest soils. Originated by Mr. I. V. Mijurin at Kozlov." (Meyer's introduction.) For distribution later.

ROSA PIMPINELLIFOLIA X RUGOSA. (Rosaceae.) 32668. Cuttings of a rose from Kozlov, Tambov government, Russia. A rose, hybrid between *Rosa pimpinellifolia* and *R. rugosa*. Of low dense growth and exceptionally hardy. Flowers said to be large and of pale rose color. Originated by Mr. I. V. Mijurin at Kozlov." (Meyer's introduction.) For distribution later.

#### SPECIAL NOTE.

Since this bulletin was prepared COCHLEARIA ARMORACIA has been changed to RADICULA ARMORACIA.

#### NOTES FROM FOREIGN CORRESPONDENTS.

ARGENTINE. Buenos Aires. Mr. C. F. Mead writes January 24 that for the present his work in Paraguay will be suspended and he will be with the Buenos Aires al Pacifico, a road serving a district from that city to the borders of Chile. He expects to resume his Paraguayan work in about six months, however.

ARGENTINE. Rio Negro. Maquinchao. Dr. Bailey Willis writes Nov. 27, 1911, that his party is now working in the high plateau region of central Patagonia and the Andes, where they will continue until next autumn, returning to the lower lands for the winter. So far they have seen little that might interest us, but he sends in a list compiled by a local manager for an English company, which describes and gives the local names for a number of interesting dry land plants. In addition he makes the following offer: "If in August, 1912, you can send a specialist of your Department to Buenos Aires I can meet his expenses and provide outfit for him to work from San Antonio across Patagonia and the Andes, up to the end of November, giving him three months in the field. For you he should get whatever information this region may yield for your purposes. For the Forty-first Parallel Survey, I would ask him to prepare a report on the flora, which should be published as a volume of the monograph which I hope to get out,

with the aid of the Argentine Government, on the scientific results of our work. Our topographic maps will cover a zone 50 kilometers wide extending from San Antonio to the Chilean boundary, and we are trying to map the geology and the soils. I would propose that your specialist should map the botanical formations."

CEYLON. Peradeniya. Dr. John C. Willis writes November 30 that he is leaving immediately for England, where he will spend the winter, leaving for Rio de Janeiro in April or May to assume his duties as Director of the Rio de Janeiro Botanical Garden.

RUSSIA. Rostoff-on-Don. Mr. Frank N. Meyer writes Dec. 9, 1911: "We visited on November 17th the School of Gardening, which is situated near Penza and which is considered one of the best schools of the sort in Russia. It was a dark, misty day and not quite fit to walk over half-frozen earth roads and glide from one mudhole into the other, but weather in Russia is a topic one leaves at rest, for it gets to monotonous. So we saw at that School a very interesting old neglected arboretum, with large specimens of *Pinus strobus*, *Picea siberica*, *Larix siberica*, *Hippophae rhamnoides*, *Malus baccata*, *M. prunifolia*, *Juglans cinerea* and other trees. We also saw a newly laid-out arboretum, with small specimens of most of the every-day trees and shrubs and along the roads there were various hardy herbaceous perennials. Then we saw the fruit plantations. Mr. Sokoloff, who is in charge of the outdoor plantings, took us around, through thick and through thin; they have about 60 varieties of apples in cultivation, but the 2 leading sorts are Antoneffka and Anees, but of both there some sub-varieties. They have experimented with various stocks and have come to the conclusion that *Malus prunifolia* is the best all-around stock for the black soil around Penza. They find it difficult, however, to obtain pure *prunifolia* seed, as this apple readily hybridizes with *M. sylvestris* and *M. baccata*. They also found that the Antoneffka apple is better able to grow on low places than any other variety. As a contribution to the uncongeniality of the East-Central Russian climate, I was told that this year they experienced a frost of 8° Reaumur in May (+14° Fahr.) and that while everything commenced to bloom. They lost of course a whole lot of fruit. Many years ago they also started a collection of dwarf fruits, but, such things are apparently not fitted for climates like around Penza, at least they almost produce no fruit at all, as the blossoms freeze nearly every spring. There are also many greenhouses in the School grounds and I saw some pretty flowers, which are sold for revenue. The heating of

greenhouses throughout Russia is still with flues, so one cannot expect cut flowers like one sees in America. Plants, however, coming originally from countries with fairly dry air, like *Cyclamen persicum*, *Cineraria hybrida*, (fr. Canary Islands), Cape of Good Hope plants, these all do better in flue-heated houses than in steam or hot water warmed conservatories and I noticed some very fine flowers on the *Cyclamens*."

Mr. Frank N. Meyer writes December 10, 1911, from Rostoff-on-Don, Russia: "Mr. Bogdan has now at Krassny Koot about 5 desiatines ( $13\frac{1}{2}$  acres) in *M. falcata*, one block of 4 des. sown broadcast and the rest in smaller parcels, among which there are blocks where the selected plants are given extra care. Of these selected types he has about 400 specimens, all differing from one another, for this *M. falcata* is wonderfully variable; among these 400 however there are about 15 types which possess all factors that make them good fodder plants, viz., of strong upright growth, plenty of foliage, good seed producers and the pods not easily springing open or dropping off. Several of these types are hybrids between *M. sativa* and *M. falcata*. It seems also, however, that *M. falcata* gradually passes over into *M. sativa*, for there are forms of the first with bluish flowers and somewhat spiralled pods. (This is apparently the form *Medicago coerulea*!) Mr. Bogdan shares my opinion that *M. falcata* lends itself to the development of many types, some of which are of value on various sorts of pasture grounds, some for various sorts of hay-lands and some fit to be grown for fodder exclusively; various localities will have to develop varieties best suited to local conditions.

Mr. Bogdan showed me several hybrids of *M. falcata* x *M. sativa* that were perfectly sterile, though of good habits otherwise. His experiences with sowing were that the seed possesses from 30-80% germinating powers. Some plants become good sized plants in one season, bearing seeds even, while others grow very slow and do not bear until the third year. Some plants stand cutting twice, while others make no growth after having been cut once. The finest quality of *M. falcata* is that it stops growing when the hot and dry weather arrives, thereby saving itself, while *M. sativa* tries to push out and weakens itself so that the plants die out after three years. Mr. Bogdan found out that a thin stand suits *M. falcata* much better than being sown thickly and to accomplish such a thin stand he mixes the seed thoroughly with old millet seed (*proso*, *Panicum miliaceum*) that does not germinate any longer and gets his plants at the right distances. Next year he hopes to have 20 desiatines (54 acres) in *M. falcata*, so as to begin to supply the farmers with seed. The climate there in Krassny Koot is a real Steppe climate. In July, 1911, it was 108°

Fahr. in the shade and in January it gets down to  $-31^{\circ}$  Fahr. The average rainfall for 33 years is 282 mm.

Mr. Bogdan's opinion of this *M. falcata* is that it will become an important forage plant in all such sections of Russia where the summers are hot and dry and the winters cold and with little or no snow.

A second specialty of Mr. Bogdan is the selection of *Agropyron cristatum* and in this he has been almost more successful even than with *M. falcata*. He has about 15 distinct strains, some tall, some low, some fit for very dry places, others for moister places and he is still getting better types. This grass has been proved such a success in south Russia that the farmers prefer it to the ordinary alfalfa, for it is far more drouth resistant, does not freeze out and gives an early crop of fine hay. The sub-species, *A. desertorum*, can be mown in early June. The commercial part of the growing has been turned over to the local Zemstvo Agricultural Society, which has 70 desiatines in this grass and they have an order on hand for 1,000 pood from the Kharkoff Agricultural Society. It sells at Krassny Koot for 8 Roubles per pood and Mr. Bogdan stated that we could obtain perhaps 20 poods yet of this year's seed. This seed is of course composed of all strains and perhaps some few other grasses in between, but it is all right for general purposes.

Besides these two main crops Mr. Bogdan works with *Agropyron repens* and *A. ramosum*. Of the first he had selected some types that give a wonderfully good stand on low places, which are inundated in the spring, and of the latter he has some very strong growing forms, fit for stony lands. Mr. Bogdan is very enthusiastic about *A. repens*, which he says exists in as many sub-races as *A. cristatum* does. Then he also keeps his eyes open for promising wild plants and has a number of various things under observation which however I could not see, as everything was cleaned off by winds and frost. He also thinks that among the many species of *Astragalus* there are some fit to be grown as forage plants. He invited me to come back toward the end of June, as everything is at its best then in the south Volga regions.

Mr. Bogdan also found the genuine *Medicago media* Litv. which is quite distinct from *M. media* of cultivation; it occurs in the southern part of the Astrakhan Territory near the salty lakes of Kamish-Samarski in Turgaisky and Uralsky counties. He donated me a herbarium specimen, but the few seeds he collected had been sown already; later on perhaps he could send us some. The plant is of slender growth and has by no means the promise of a successful forage plant, like *M. falcata*, *M. coerulea* and *M. glutinosa* have.

*Medicago ruthenica* is not much of a success at Krassny Koot. It remains too low and is of semi-prostrate habits.

*Medicago cancellata* had been received this spring from Mr. von Arapow, but only one plant had come up and that fellow looked suspiciously like *Cytisus biflorus*, which is very common throughout the south Volga regions.

Mr. Bogdan had recently gotten a wheat specialist as assistant and from the last I heard, the climate around Krassny Koot is suited to a small number of wheats only. The short durum grained wheats, with the bracts close together, thrive best of all. The famous select Svalöf wheats were hopeless failures, but some varieties from hot and dry Turkestan did well, like for instance a biscuit wheat from Khiva, *Triticum aestivum graecum*, "Khivinka", of which I obtained a small sample. Bjela Turka wheat, one of the standard durum wheats of south Russia, is not altogether fixed; it breaks up in 7 or 8 different strains there in Krassny Koot. This assistant said that for localities like Krassny Koot people had to breed their own races of wheat and to be very careful in importing seed from other localities, as the imported wheats nearly always degenerated the first year and that now especially the whole of southeastern Russia was in a sorry plight, because the crops had been hopeless failures this year and on many places there was not even grain enough left, so the farmers were already importing wheats that are not suited to local conditions. What they are trying to obtain especially in southeastern Russia are races of perfectly hardy winter wheats and next to that, varieties that need less moisture or less time to ripen. The selection work was too recently started to show any results but the first indications are very promising; one wheat of which the type produced 13 poods to the desiatine, gave 41 poods this summer."



LARIX SIBIRICA.            Siberian larch.

"A very large specimen of this tree which proves to be a very much faster grower in the north of Russia than any other larch. This specimen is not over 40 years of age." From photograph by Mr. Frank N. Meyer, taken at Liesnoi near St. Petersburg, Russia, December 17, 1909.

After having seen the tree in its native forests throughout his Siberian journeys, Mr. Meyer says, "The Siberian larch is a splendid timber tree, occurring in localities even up to 8000 feet and where the growing season is not over 10 weeks; this larch grows faster than any other cold-enduring coniferous tree and its lumber is prized by Russian settlers in the Altai above any other wood."