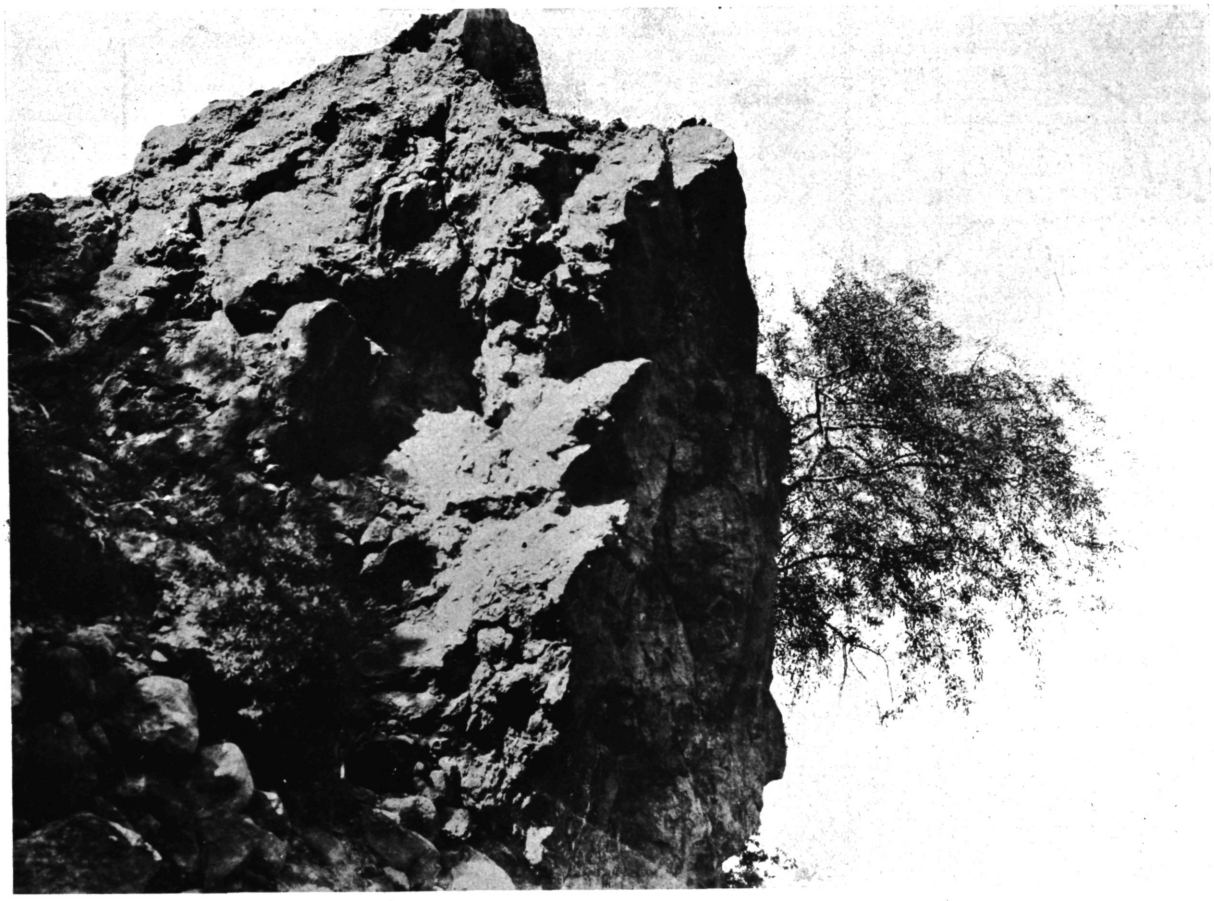
Abies spp. (Pinaceae.) 39860, 39983-987. Seeds of Japanese firs received through the Arnold Arboretum, Jamaica Plain, Mass., from the collections of Mr. E. H. Wilson. *Abies mariesii* Masters, one of the rarest of silver firs, *A. sachalinensis* (Schmidt) Masters, attaining 130 feet in height, and probably very hardy, *A. umbellata* Mayr, a beautiful hardy tree, and a variety of *A. veitchii* Lindl., with olive yellow cones, an especially handsome small conifer.

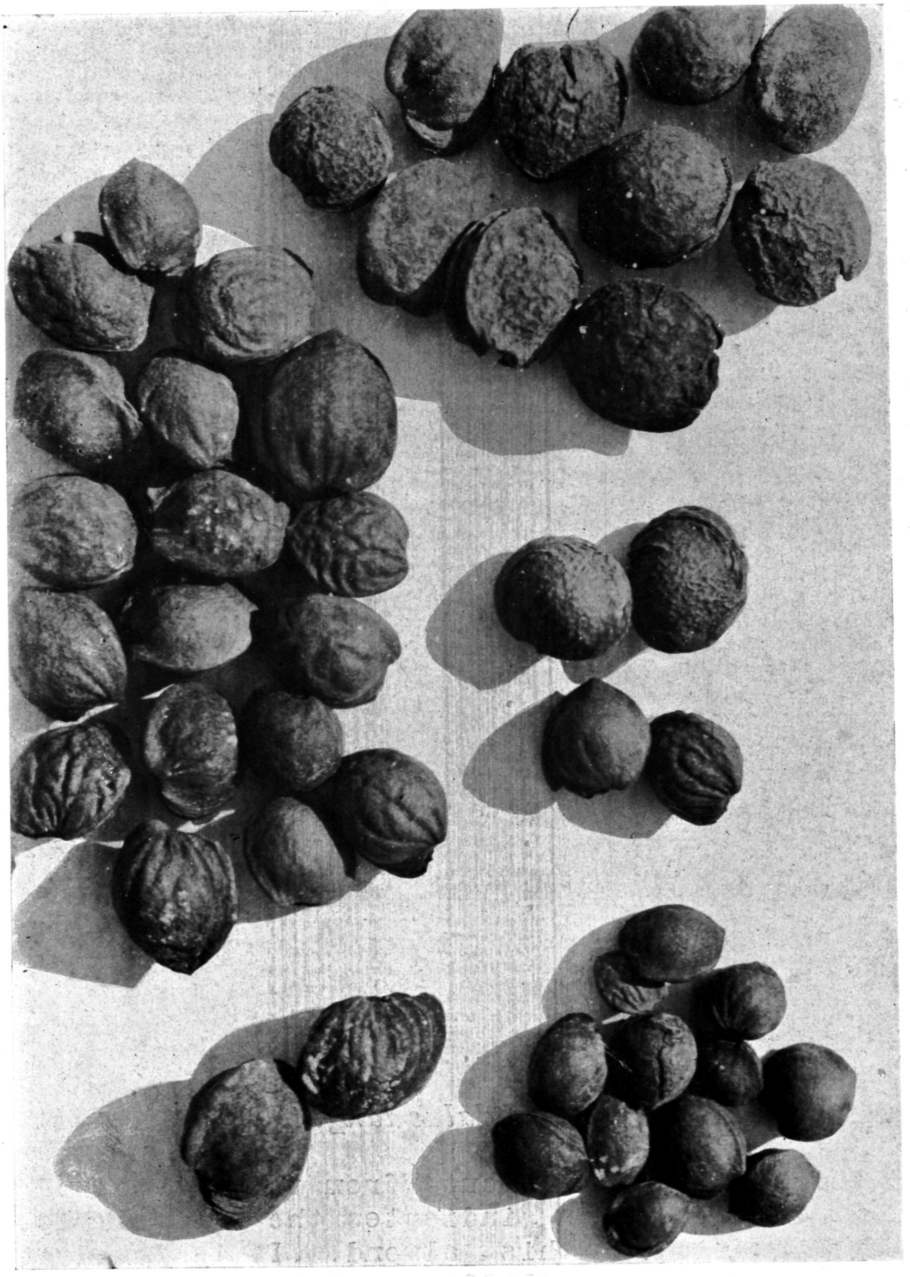
Acer capillipes Maxim. (Aceraceae.) 39988. Seed of a Japanese maple received through the Arnold Arboretum from the collections of Mr. E. H. Wilson. A handsome maple closely allied to *A. pennsylvanicum*, which it resembles in the shape of its leaf, but is distinguished by its lack of down on leaves and young wood.

Amygdalus tangutica (Batal.) Korsh. (Amygdalaceae.) 39898. Cuttings of the Tangutian almond from the village of Lan tsai, Kansu, China. "A bush almond found in rocks and cliffs along the right bank of the Siku river, collected at an elevation of 4200 feet. Shrubs from 4-10 feet high, in sheltered places reaching even a height of 20 to 25 feet, densely branched, branches often running zigzag, and ending in spines. Foliage small and of a glaucous green color. Fruits very variable in size, looks and shape; skin downy and thin, stones ranging in size from a cherry stone up to a good-sized apricot stone, of many forms, some round and quite smooth, others pointed or heartshaped and grooved like peach stones, shells moderately thin, kernels small on the average and quite bitter; they are, however, eagerly collected by ground squirrels. Here and there local Chinese also collect them and express a clear oil from the kernels for culinary purposes. These kernels are also sparingly eaten after having been boiled first so as to remove part of the bitter flavor. This Tangutian almond occurs in many places in the province of Kansu, growing at elevations from 4000 to 10000 feet. It is able to withstand a great amount of drought, cold and dry heat. It is recommended as a factor in certain hybridization experiments, to create hardy bush almonds. As a stock for almonds it might be tested, but since it throws up so many shoots from the base it may not have any commercial value for this purpose. As a hedge plant for dry regions it also possesses value, while as an ornamental spring flowering shrub it possibly could be employed in gardens and parks in the cooler parts of the semi-arid United States. Chinese name *Yeh hsiao hsing*, meaning 'wild small apricot,' also *Mao tao'r* meaning 'hairy peach.'" (Frank N. Meyer's introduction and description.)



The Tangutian almond (*Amygdalus tangutica*, S.P.I. No. 39898).

A large bush growing out from the crevice of a large rock. Such a situation indicates the remarkable drought resistant quality of this almond. It is found at elevations of from 4000 to 10000 feet and can stand great drought, cold and dry heat. Photo No. 13095 by Frank N. Meyer, Lan Tsai, Kansu, China, Oct. 29, 1914.



Tangutian Almonds (*Amygdalus tangutica*), S.P.I. No. 39898.

The illustration shows the variation in size and form. The kernels are bitter but edible after boiling. The bushy character of this almond may make the species valuable for hybridization purposes to produce a hardy commercial bush almond. Natural size photograph No. 13093 by Frank N. Meyer, Siku, Kansu, China, Nov. 15, 1914.

Betula spp. (Betulaceae.) 39989-991. Seeds of Japanese birches received from the Arnold Arboretum, from the collections of Mr. E. H. Wilson. *Betula schmidtii* Regel, a stately tree from southeastern Manchuria, *B. pendula japonica* Miq., and *B. ulmifolia* Sieb. & Zucc., a native of Japan, and very rare in cultivation, attaining a height of 50 to 70 feet.

Castanopsis sp. (Fagaceae.) 39909. Cuttings from near Pao dji, Kansu, China. "A small tree found in between tall scrub on protected mountain sides at 8000 feet elevation. Bears burrs like those of a chestnut, which contain chinquapin-like nuts; it bears, however, also catkins like a hazel or an alder when it is leafless. Leaves somewhat like those of a chestnut but of a thinner and less persistent structure. Of value possibly as a new nut-bearing tree, fit for regions where the winters are not too severe." (Frank N. Meyer's introduction and description.)

Citrus sp. (Rutaceae.) 39897. Cuttings from near Lian dja pa, Kansu, China. "A peculiar species of citrus growing into a large tree, bearing loose-skinned, round, flattened fruits the size of mandarin oranges. Color of rind light-yellow; rind full of oil-glands, smelling like a fine lemon; segments separating easily; fairly juicy and of an agreeable sharp sour taste; contains plenty of large seeds. These sour mandarin fruits make a very pleasing lemonade cut up with rind and all in a tumbler of water and some sugar added. They also taste well when cut up in slices in hot tea, while a few pieces of rind added to a soup or stew gives a novel and agreeable flavor. The trees are of thrifty growth, making large heads of dark-green foliage, they are prolific bearers, apparently; young shoots armed with large spines. They are not grafted or budded but propagated from seeds only. This citrus is found at elevations from 2000 to 4500 feet, and where they grow one finds the following trees cultivated: *Diospyros kaki*, *Ficus carica*, *Punica granatum*, *Juglans regia*, *Pyrus sinensis*, *Morus alba*, *Hovenia dulcis*, *Ligustrum lucidum*, *Chamaerops excelsa* and *Phyllostachys sp.* Of value possibly as a tree for the home garden in sections north of the citrus belt proper." (Frank N. Meyer's introduction and description.)

Corylus ferox tibetica (Bat.) Franch. (Fagaceae.) 39907. Cuttings of a hazel from near Pao dji, Kansu, China. "A hazelnut growing into a tree from 80 to 100 feet tall, having a trunk often a few feet in diameter. Bark reddish brown and peeling off in loose layers, like that of a birch.

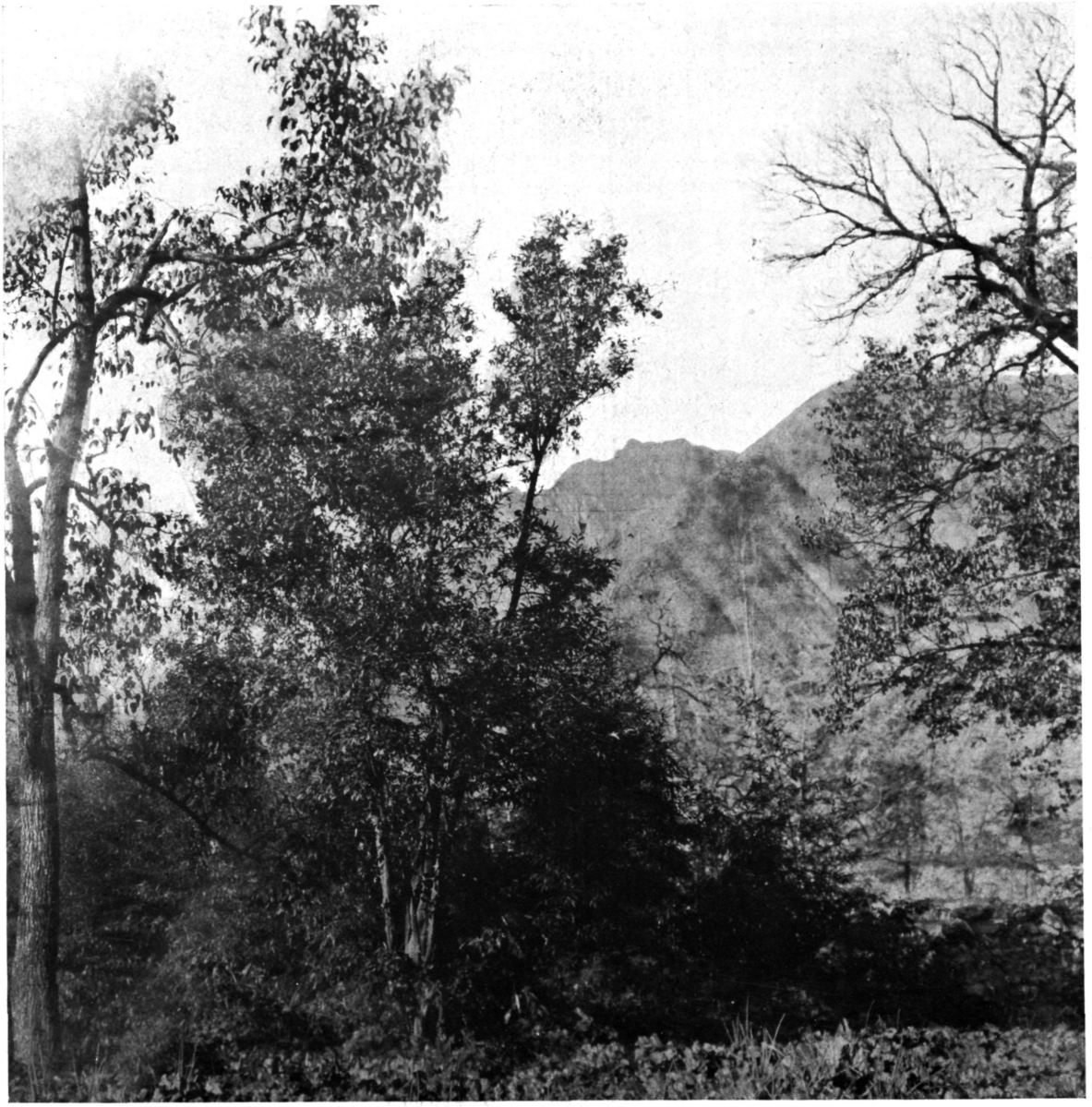
Leaves large, of elliptical shape, petioles long, nuts small and each enclosed in a protuded involucre; they are borne in clusters from 2 and 3 up to 7 and 8. Shell very thick; kernels small, but edible. This hazel-tree bears masses of catkins at the time the leaves come out; it looks very much like a birch or an alder and aside from its having a utilitarian use as a nut bearing tree, it also has a decided value for ornamental purposes, especially when planted in a group or a grove of some extent. Through selection and by hybridization possibly, strains can be obtained bearing larger nuts with thinner shells and possessing commercial value. The climate where these hazels thrive is not a very severe one and the trees probably will not be able to stand extreme temperatures. Collected at an elevation of 7000 feet." (Frank N. Meyer's introduction and description.)

Daphne tangutica Maxim. (Thymelaeaceae.) 39914. Rooted plants of a daphne from near Siku, Kansu, China. "A very beautiful evergreen bush of low and compact growth; foliage dark green and leathery; occurring on stony debris in sheltered ravines and in open woodlands at altitudes from 5000 to 10000 feet. Flowers white with a slight violet tinge, faintly scented, appearing in early spring, though some stray ones can be seen in autumn also. Berries bright red and ripe at the end of May and in early June. This shrub is of high decorative nature; it can be employed especially near houses and low walls and may succeed in such sections of the United States where the winters are not too severe, like Long Island, for instance. The plant is apparently easy to propagate from root cuttings, for roots that were seen sticking out amidst pebbles and stony debris and of which the top parts had been chopped off were observed to put forth new sets of branches. In the mountains to the north of Siku, where this Daphne occurs in abundance, one also finds great quantities of *Buxus sempervirens* and an evergreen species of Pteris, while ivy clings here and there against the rocks; this all often conveying the impression as if man had brought these plants together here and had made a wild garden of it." (Frank N. Meyer's introduction and description.)

Deringa canadensis (L.) Kuntze. (Apiaceae.) 39869. Seeds of honewort from the Brooklyn Botanic Garden. Presented by the Director, Dr. C. Stuart Gager. This native American herb, formerly known as *Cryptotaenia canadensis* DC., Japan, is described by a recent Japanese visitor to America, Mr. T. H. Kuwashima, of Mito, as one of the highest

Citrus Fruits of the Mandarin type, S.P.I. No. 39897.

These have a light yellow rind with peculiar oil glands, a lemon odor and an agreeable sharp sour taste. May prove of special value because of the unusual hardiness of the tree. From near Lian dja pa, Kansu, China. Natural size photograph No. 13140 by Frank N. Meyer, Oct. 20, 1914.



Citrus sp. from Mountains of Kansu, China.

Tree in center is of the Citrus species (S.P.I. No. 39897) exhibited on the previous plate. Found at elevations of 2000-4500 feet in the Province of Kansu, China, by Mr. Frank N. Meyer, who reports it to be a thrifty species, a prolific bearer and in his opinion adapted to sections north of the Citrus belt. Photo No. 13141, by Frank N. Meyer, Siku, Kansu, Nov. 13, 1914.

priced vegetables cultivated in Japan, the young shoots being used as an excellent salad. The little book by Professor Tanaka, Useful Plants of Japan, issued by the Agricultural Society of Japan, says concerning it: "*Mitsuba*, *Mitsuba-jeri*, a perennial herb of the order Umbelliferae growing wild in moist valleys, but much cultivated from seeds or by dividing the roots. In spring young leaves come forth to a height of about one foot. They are eaten boiled, and the roots can also be eaten fried. One variety with fine thread-like petioles and shooting bushes to 8-10 inches high is called *Ito-mitsuba* (thread honewot.)" Apparently worthy of trial by American amateurs.

Diospyros kaki L.f. (Ebenaceae.) 39912-913. Cuttings of persimmons from Kansu, China. 39912, "from near Kwa tsa, a remarkably large and beautiful persimmon of very flat shape and bearing some furrows on top. Color bright deep orange; seedless, non-juicy, of excellent keeping qualities; can be eaten fresh or dried; not free from pucker. Quite a rare variety. Local name *Momo sze tze*, meaning 'loaf of bread persimmon,' though many different forms pass under that name;" and 39913, "a persimmon of square shape, bearing generally a constriction close to the peduncle, also often furrowed vertically. Of light orange color, seedless; non-juicy; a very good keeper but of astringent properties when eaten fresh, therefore consumed when roasted or steamed, by which processes the pucker disappears for the greater part; also much eaten dried. Chinese name *Fang sze tze*, meaning 'square persimmon.'" (Frank N. Meyer's introductions and description.)

Euonymus sp. (Celastraceae.) 39903. Cuttings from near Ka go ba, Kansu, China. "A spindle wood, growing into a medium-sized tree with a dense, well rounded head of branches. Leaves round elliptical, of opaque green color and somewhat wrinkled. Collected at an elevation of 8000 feet. Of value as an ornamental park tree for the cooler sections of the United States." (Frank N. Meyer's introduction and description.)

Hicksbeachia pinnatifolia Mueller. (Proteaceae.) 39871. Seeds from Burringbar P. O., New South Wales. Presented by Mr. B. Harrison. "Red bush nuts. This tree grows to a height of 30 or 40 feet and the fruit is borne in racemes, attached to the bark and branches of the tree, each carrying 10 or 12 fruits. The flavor is not quite so good as the Queensland nut, *Macadamia ternifolia*, nor does it keep so well, but nevertheless they are sold in some fruit shops

here at 12 cents per pint. I do not think they have been cultivated anywhere in the United States, but could easily be grown in any of the warm southern states." (Harrison.)

Malus sp. (Malaceae.) 39923. Cuttings of a crab-apple from Lien hua shan, Kansu, China. "A peculiar species of crab-apple, bearing its small fruits in bunches. These fruits are of the size of peas, are bright red and possess an agreeable sour flavor; they probably could be well utilized for preserves. The trees are of somewhat dwarf growth and seem remarkably hardy. They may be of value as stocks, as ornamental trees for northern regions, and for breeding purposes. Collected at an elevation of 9000 feet." (Frank N. Meyer's introduction and description.)

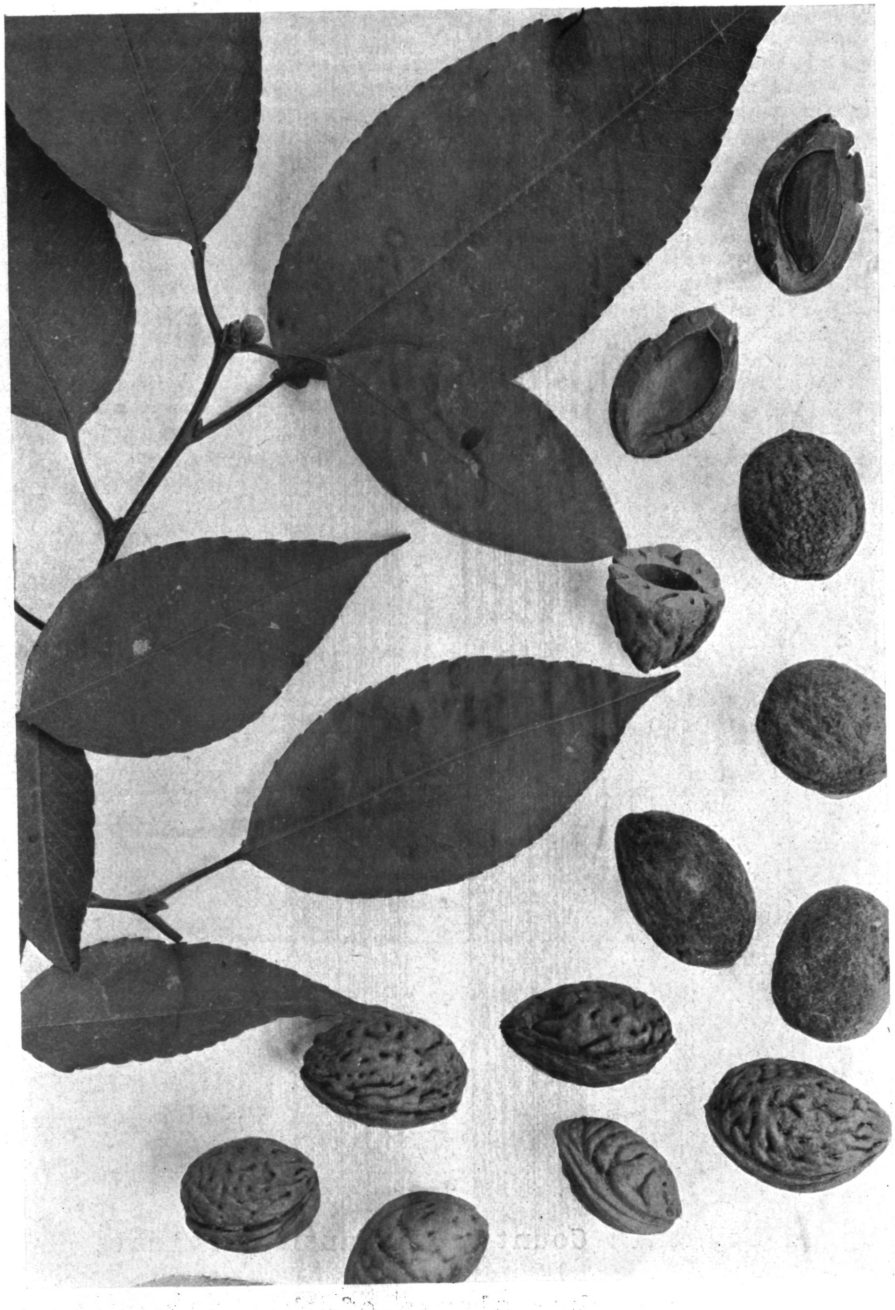
Prunus persica potanini Batalin. (Amygdalaceae.) 39899. Cuttings of a wild peach from the village of Tchu tsai tze, Kansu, China. "A wild peach of the *davidiana* type, but differing from it in various points. Collected at the base of sheltered mountains at an elevation of 4300 feet. A tall shrub or even small tree, up to 30 feet in height, bark of stem or trunk dark reddish-brown and quite smooth in the younger shoots; leaves like those of *Amygdalus davidiana* but often broader in the middle and always less pointed. Fruits of round-elongated form; skin covered with a heavy down, no edible flesh; stones of elliptical shape, grooves longer than in *A. davidiana*, shells very hard and thick, kernels elongated and relatively small. Found growing at elevations from 4000 to 7000 feet, in side valleys away from the Siku river; thrives especially well in sheltered and warm mountain pockets. Of value especially as a stock for stone-fruits and possibly able to stand even more dry heat than *A. davidiana*; also recommended as an ornamental spring-flowering tree, especially for the drier parts of the United States. Chinese name *Mao t'ao*, meaning 'hairy peach.'" (Frank N. Meyer's introtion and description.)

Prunus spp. (Amygdalaceae.) 39902, 39911, 39918. Cuttings of three species from Kansu. *P. brachypoda* Batalin(?), a wild cherry, the leaves of which color up beautifully in the autumn, and which may have value as a stock, *P. setulosa* Batalin, of possible value as a stock and for breeding purposes, and *P. stipulacea* Maxim (?), of possible value as an ornamental shrub, as a stock, and for breeding purposes. (Frank N. Meyer's introductions.)

Ribes spp. (Grossulariaceae.) 39910, 39916. Cuttings of a currant and a gooseberry from Kansu, China. 39910, "a

Wild Rugged Mountain Country in Kansu Province, China.

On the steep rocky slopes of this region at elevations of over 4000 feet Potanin's drought resistant wild peach (*Prunus persica potanini*, S. P. I. Nos. 39899, 40007, 40008, 40009) occurs in company with Loniceras, *Philadelphus* spp., Viburnums, *Hippophae salicifolia*, etc. Photograph No. 13092, by Frank N. Meyer, near Pao dji, China, Nov. 9, 1914.



Potanin's Wild Peach of the Kansu Province of China (*Prunus persica potanini*).

This is called the "Mao tao" or hairy peach and belongs to the same general type as *Amygdalus davidiana* but may withstand even greater heat and prove of value as a stock in the arid west (S.P.I. Nos. 39899, 40007, 40008, 40009). Natural size photograph No. 13091 by Frank N. Meyer, Lan Tsai, Kansu, China, Nov. 3, 1914.

currant of very vigorous growth, collected on a sheltered mountain side at an elevation of over 7000 feet. The shrubs are of open growth and reach a height of 25 feet. Of value possibly for hybridization purposes." 39916, "a wild gooseberry, growing from 6 to 15 feet tall, found in dry loess embankments at elevations from 7000 to over 9000 feet. Remarkably spiny; berries medium large, of elongated shape and persisting throughout the greater part of the winter. These gooseberry fruits are preserved by the American missionaries at Kiu cheng and they supply a very delicious tart compote. Of value apparently as a fruiting shrub and as a hedge plant for the cold semi-arid sections of the United States." (Frank N. Meyer's introductions and descriptions.)

Salix spp. (Salicaceae.) 39921-922. Cuttings of willows from Lien Hua shan, Kansu, China. 39921, "a remarkable variety of willow, growing into a tall shrub or a bushy small tree and of which the tops for the length of about one foot are of a bright yellow color. When seen from above on a sunny winter day they make a strikingly cheerful impression. Of special value for parks when planted in masses or in groups in glens or in low-lying places, so that they can be viewed from above. Collected at an elevation of 9000 feet. Proposed name Golden Top Willow. Where these Golden top willows grow one also finds deep blue spruces, snowy white birches, and red-wooded dogwoods. These together with the purplish crags as a background, make a most wonderfully harmonious winter landscape." 39922, "a variety of the Golden top willow, but with the young twigs of a rich reddish-brown color." (Frank N. Meyer's introductions and descriptions.)

Tamarix aphylla (L.) Karsten. (Tamaricaceae.) 39856. Cuttings of a tamarisk from Cairo, Egypt. Presented by Mr. Thomas W. Brown, Director, Horticultural Division, Ministry of Agriculture. "This is by far the best of the Egyptian species for cultivation as a timber tree on desert land. We have employed it largely as a wind- and sand-break at the Sewage Farm at Khanka, which is situated on what was unreclaimed desert land. The cuttings were planted along shallow water channels, containing in one case chlorine equivalent to sodium chloride to the extent of 1272 parts per million and in another case to the extent of 2028 parts per million. *Tamarix aphylla* very rarely produces seed here." (Brown.)

Viburnum furcatum Blume. (Caprifoliaceae.) 39998. Seeds from Japan, received through the Arnold Arboretum, from

the collections of Mr. E. H. Wilson. "This has the showy sterile marginal flowers, but its stems are more uniformly erect (than *V. alnifolium*.) It differs also in the shorter stamens, which are only half the length of the corolla, and in the shape of the furrow in the seed. It succeeds in gardens no better than *V. alnifolium*, although there was a healthy plant at Abbotsbury, near Weymouth, a few years ago. It is a native of northern Japan at low levels, and of the mountainous parts of the south. The foliage turns brilliant scarlet to reddish purple in autumn. It is a bush twelve feet or more high in a wild state." (W. J. Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 642.)

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