

TREES OF SOVIET CENTRAL ASIAN MOUNTAINS

by M.J. Whitehead

There are two great mountain ranges in Soviet Central Asia. The Tien-Shan range spans from western China into the Soviet republics of Kazakhstan and Kirgizia and terminates in Uzbekistan near Tashkent. The republic of Tad-jikistan forms the most southerly part of the U.S.S.R. in Central Asia where the Pamir-Alai mountains terminate as the north-west extension of The Himalaya.

Within the vast mountainous area bordering China and Afghanistan lies Peak Communism (24,590 ft.), which is the highest mountain in the U.S.S.R. The last ridges of the Pamir-Alai spread out towards the Russian deserts on latitudes similar to southern Spain and Greece, and reflect these areas in climatic conditions with hot dry summers. The areas lack arboreal diversity in the range of genera, the most abundant natives are *Juniperus* and *Prunus* species, with more sporadic occurrence of birch, maple, poplar, walnut, and willow. Due to the very high mountains and the extent of the Soviet deserts, it results in a marked absence in the distribution of oak and pine (Fig. 1).

The higher north faces of the Pamir-Alai mountains are often thickly covered with juniper forests of three species. The lower altitudes are dominated by the dark dense conical crowns of *Juniperus seravschanica*, and the middle and higher areas give way to the more open light green crowns of *J. semiglobosa* (Fig. 2). The latter is distinctive in having pendulous branchlet tips and smaller cones. The high altitude species, *J. turkestanica*, forms a slow-growing globular shrub. Some of the junipers attain large proportions and are reputed to attain an age of up to 2,000 years. In more open areas within the junipers, *Sorbus persica* are found and at higher elevations *S. tianschanica*. *Betula tianschanica* form groups of showy trunks, creamy white with shades of pink peeling bark, among the dark juniper foliage, and on grassy slopes near recently melted snow spring numerous minute white stars of *Colchicum kesselringii* (Fig. 3).



1. Pamir-Alai Mountains near Khamzaabad south of Fereana (habitat area for *Sorbus tianschanica* and *Betula tianschanica*).



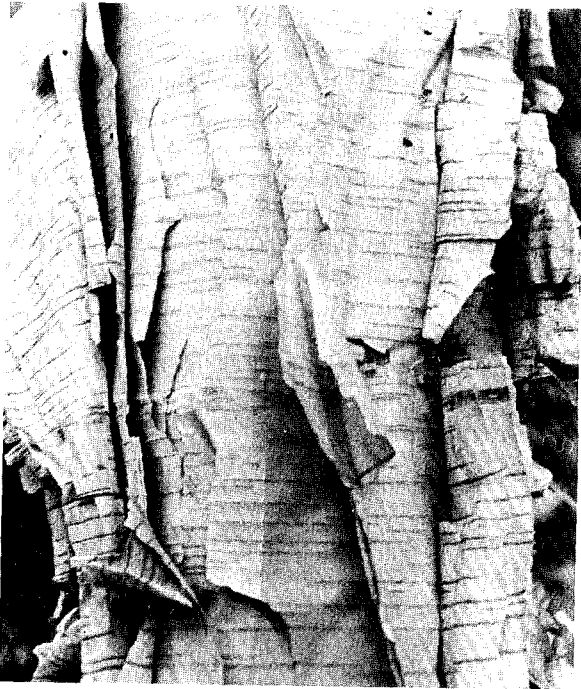
2. High altitude forests of *Juniperus semiglobosa* and darker crowns of *Juniperus seravschanica* near Iordan in the Pamir-Alai Mountains of Tadzhikistan.

In the lower valleys of the Varzob Gorge north of Dushanbe there is a rare opportunity to see naturally occurring a tree that has been domesticated, the plane (sycamore). In various Soviet floras this tree is often named as *Platanus orientalis* which has distinctive deeply lobed leaves and having long styles although modern authors and local botanists agree to the correct name being *P. orientalis*.

In April the wooded slopes of the Varzob Gorge come alive with the white flowering *Prunus divaricata* and *P. mahaleb*. At higher altitudes the drier slopes are covered with pink almond blossoms of *P. bacharica* and the shrubby *P. erythrocarpa*. Soviet botanists recognize numerous segregate genera of the large genus *Prunus* and would name the above plants as *Amygdalus bucharica* and *Cerasus erythrocarpa*. A number of these fruiting trees are grown as or-

chard crops in the foothills. Walnuts are native to the area and are subject to nomenclatural discrepancies which appear to be variants of *Juglans regia*. *J. fallax* is often mentioned as being native to the area but may only occur farther west in the Kopet Dag Mountains bordering Iran. *Crataegus pontica* and *Acer turkestanica* form thickets with *Celtis caucasica* and *Pistacia vera*. *Exochorda korolkowii* has a showy display of white blossoms covering the tops of tall upright shrubs.

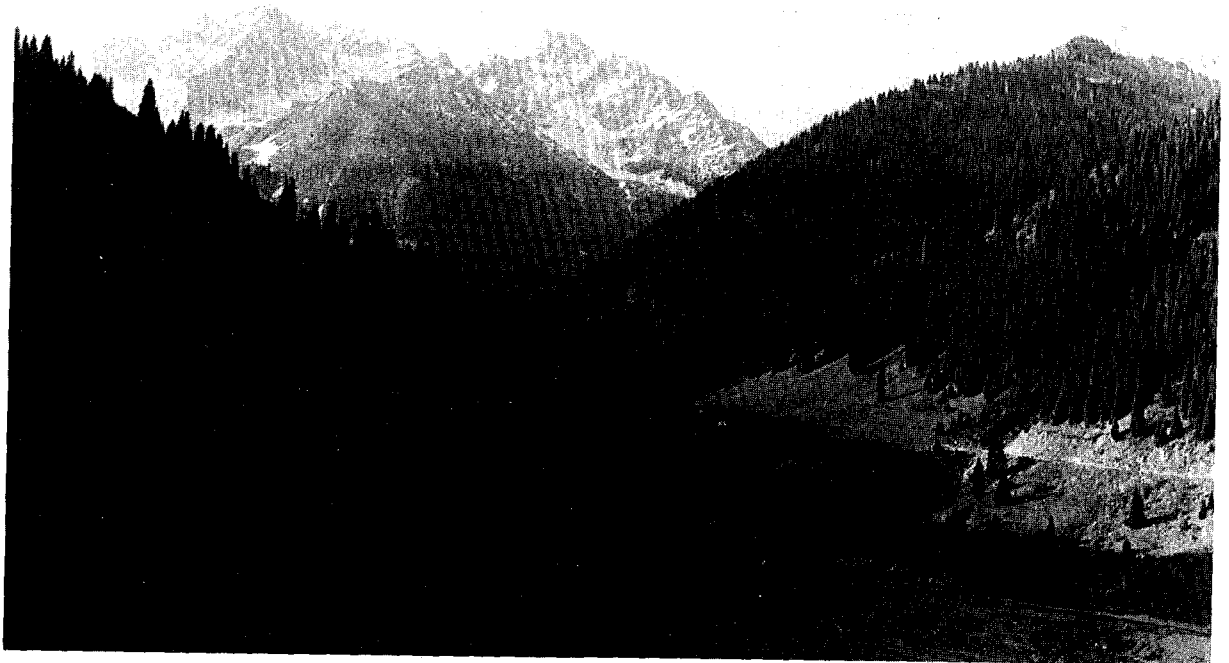
In the mountains south of Fergana at Khamzaabad and Iordan the limestone rocks support a number of shrubs including *Berberis*, *Cotoneaster*, *Lonicera*, and the yellow-flowered *Rosa kokanica*. Along high-altitude dry stream beds which wind through dark juniper forests are *Betula tienschanica*, *Populus pamirica*, and shrubby trees of *Acer ginnala* var. *semenovii*.



3. *Betula tienschanica* trunk with cream and tinted pink unfolding layers of bark.



5. *Picea schrenkiana* and *Sorbus tienschanica* in the Tien-Shan Mountains south of Funje in Kirgizia.



4. Spruce forests below Talgar Peak (12,148') south of Alma-Ata in Kazakstan.

The Tien-Shan mountain range occurs north of the Pamir-Alai, being separated by the fertile region of the Fergana Valley. A number of endemic birch and hawthorns are recorded in The Tien-Shan, including *B. kirghisorum* and *C. almaatensis*. The latter grows in the foothills south of Alma Ata where it is rare and is included in the U.S.S.R. Red Book of endangered species along with the tiger and wild horse.

The Tien-Shan range has additional coniferous trees (Fig. 4). The rare *Abies semenovii* which is found locked in the Fergana Mountains where the milder climate has resulted in softer and larger foliage compared with its more northerly relative,

A. sibirica. The common coniferous tree is *Picea schrenkiana* which forms compact forests between 3,000 and 10,000 feet altitude (Fig. 5). A closely related form recorded as *P. tienschanica* is reported to be found in the Chatkal range. *Picea schrenkiana* is a narrow conical tree with pendulous branches and may attain a height of 120 feet, often occurring on steep mountain slopes.

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ABSTRACTS

Chapman, Douglas. 1980. **Alone or in combination plantings, yews complement landscape well.** Weeds, Trees & Turf 19(7): 72-83.

Yews, due to their rich regal-green color, are effectively used in mass plantings or as specimen plantings. They are effectively combined with many plants but are aesthetically outstanding when combined with bedding plants, such as red geraniums or salvia. Yews grow well in shade or sunny conditions (watch varietal selections). While being perfectly hardy and able to withstand even the coldest winters, yews seem to be most sensitive to overwatering or poorly drained soils. In England, the yew was a sacred tree, believed to be a symbol of long life and/or immortality. Early Christian churches were built in yew groves. In most English churchyards, one can find the yew — a symbolic link to immortality. There is much controversy about how many species of *Taxus* exist. Three species somewhat universally accepted; English yew (*Taxus baccata*), Canadian yew (*Taxus canadensis*), and Japanese yew (*Taxus cuspidata*). Once the correct variety is chosen, understanding the insects, diseases, and maintenance requirements makes yew an outstanding addition to the landscape.

Williams, D.J. 1980. **How slow-release fertilizers work.** Am. Nurseryman 151(6): 90-97.

The number of controlled-release products has increased over the years. The products are distinguished by differences in release characteristics and fall into three classes. The classes are: 1) coated water-soluble materials; 2) inorganic materials of low water solubility; and 3) organic materials of low water solubility that decompose by chemical hydrolysis and/or biological activity. The mechanism for nitrogen release varies in each class and responses differ with medium conditions, such as pH, moisture, and temperature. Physical properties of the fertilizers, such as particle size and coating thickness, also influence the release mechanism. A detailed discussion of each class is given to better understand how the fertilizers in these classes work and to understand how environmental and physical factors affect fertilizer performance.