

DICTIONARY
OF ECONOMIC PLANTS

by

J. C. TH. UPHOF

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PREFACE

The purpose of this book is to present alphabetically a brief description of economic plants in their broadest sense, with their geographical distribution, their products and principal uses. Such a comprehensive work has long been needed. However, there are a number of useful publications which describe economic plants from certain areas, countries, plant families, genera or economic groups, such as those producing oils, rubber, drugs, spices, essential oils, gums, resins, and so on. These publications have paved the way to a considerable extent for the preparation of this book. Many of these special treatises are listed at the end of this work under „Bibliography“.

Crops have been considered that are of importance to agriculture, forestry, fruit and vegetable growing, pharmacognosy; also those that are of importance to the world trade, as well as plants that are strictly of local value. A considerable number of species are given that are of ethnological interest in that they furnish food, medicine and other commodities of value in the daily life of primitive peoples. Many plants have been included that have proven to be of value in times of want during war time, or in certain countries during periods of famine.

The nomenclature of the adaptation of the scientific names is close to that of the Index Kewensis and its Supplements. Also the International Code of Botanical Nomenclature has been followed as far as it was feasible to do so.

With each species the name of the family to which it belongs has been given. It will be noticed that the names of practically all families end in -aceae, e. g. Rutaceae, Palmaceae, Zingiberaceae. After each species the name of the author who has given that particular name to the plant is indicated; for example L. stands for Carolus Linnaeus; Engl. for Adolf Engler; Lam. for Jean de Lamarck. In a number of instances other scientific names are given, they are synonyms. Because of the length of this work, it has only been possible to cross-reference the more important plants and their products.

Over 6000 different species have been considered, including the lower as well as the higher forms of plants. A number of species could not be included because the sources were not reliable or important data were uncertain.

A constructive criticism or advice which lead to the improvement of future editions will be gratefully received by the author.

Unfortunately, the publication of this book was delayed due to technical reasons.

Most of the manuscript was prepared in the libraries of the New York Botanical Garden, New York Public Library, U.S. Department of Agriculture, Cornell and Harvard University. In addition, much useful information was obtained through written inquiry to many parts of the world. The author is most appreciative for the kind help he received from the Library Staff of the New York Botanical Garden and of the U.S. Department of Agriculture, Washington, D. C. Also an expression of appreciation is due his wife and his daughter and son-in-law, Mr. and Mrs. Harold W. Oliver, Jr. who helped in the preparation of the manuscript.

Tampa, Florida, March 1959.

J. C. Th. UPHOF.

ERRATA

Abies nobilis (Dougl.) Lindl. being the generally used name must be replaced by the new (1940) *A. procera* Rehd. as the valid name, according to the Int. Code of Bot. Nomencl., because *A. nobilis* (Dougl.) Lindl. is a newer homonym (1833) than *A. nobilis* Dietr. (1823) which after all is a never used and until 1940 forgotten synonym of *A. pectinata* DC.

Aristolochia brasiliensis Mart. and Zucc. Add the author names to the following species: *A. galeta* Mart. and Zucc., *A. cymbifera* Mart. and Zucc., *A. rumicifolia* Mart. and Zucc., *A. odoratissima* L., *A. cordiflora* Mutis ex H. B. K., *A. turabacensis* H. B. K., *A. fragrantissima* Ruiz and *A. maxima* Jacq.

Aphenanthe aspera Engl. read *Aphananthe asepera* Engl.

Cinchona sucirrubra Pavon read *Cinchona sucirubra* Pavon.

Coprinus comatus (Fl. D.) Gray read blackish instead blackist.

Cupressus Benthami Endl. (1847) should be *Cupressus lusitanica* Mill. according to the Int.

Code of Bot. Nomencl. because the name is older (1768), though *lusitanica* (meaning from Portugal) is absurd for a Central American species.

Drug Lionsnear read *Drug Lionsear*.

Eucalyptus hemiphloia F. v. Muell. read *Grey Box* instead *Gray Box*.

Fraxinus oregana Nutt (1849) must be replaced by the older (1844), though not a much used name *Fraxinus latifolia* Benth. according to the Intern. Code of Bot. Nomencl.

Hyssopis officinalis L. read -pinene instead -pinense.

Oryza sativa L. Read *culinary* instead *colinary*.

Raphanus sativus L. read *annual* or *biennial* instead *annual* or *perennial*.

Simmondsia californica Nutt. (1844) must be *Simmondsia chinensis* (Link) Schneid. being an older (1822) name according to the Int. Code of Bot. Nomencl., though *chinensis* (meaning from China) is a misplaced name for a well known plant from California and adj. Mexico.

A

Abaca → *Musa textilis* Née.

Abbevillea Fenzliana Berg., Guabiroba. (Myrtaceae). - Small tree. Brazil. Occasionally cultivated. Fruits edible, orange-yellow, flavor like a. Guava; used for jelly.

Abbevillea Guaviroba Berg. → *Campomanesia Guaviroba* Benth. and Hook.

Abelmoschus moschatus Moench. → *Hibiscus Abelmoschus* L.

Aberemoa dioica Rodr. Borb. → *Annona dioica* St. Hil.

Aberia caffra Harv. and Sond. → *Dovyalis caffra* (Hook. f. and Harv.) Warb.

Aberia Gardneri Clos. → *Dovyalis hebecarpa* (Gardn.) Warb.

Abies alba Mill. → *Abies pectinata* DC.

Abies amabilis (Loud.) Forbes., Cascade Fir, Silver Fir, White Fir. (Pinaceae). - Tree. Pacific Coast of N. America. Wood hard, light, not strong, close-grained, light-brown; used for interior finish of buildings, source of wood pulp.

Abies balsamea (L.) Mill., Balsam Fir. (Pinaceae). Tree. N.America. Wood soft, light, coarse-grained, not strong, perishable, pale brown with yellow; used for crating, staves for fish and sugar barrels, butter boxes, food containers; pulpwood; made into wrapping paper and paperboard. Needles impart a pleasant scent and are used for stuffing cushions. Source of Canada Balsam, Canada Turpentine or Balsam of Fir, Balm of Gilead, a liquid oleoresin; used for mounting slides in microscopical technique, also as cement for lenses, manuf. of fine lacquers. Sp. Gr. 0.987 - 0.994. Has been used medicinally in catarrhal diseases of urogenital tracts; externally used for plasters.

Abies concolor Lindl. and Gord., White Fir. (Pinaceae). - Tree. Western N.America. Wood course-grained, very light, not strong, soft, not durable, pale brown to almost white; used for butter tubs, packing cases, doors, frames, general millwork, as building material and pulp wood.

Abies Delavayi Franch. (Pinaceae). - Tree. W. China. Wood light, soft, not very durable, white; used in China for house building, beams, interior finish, boards, general house-hold purposes, cheaper grades of coffins. Important timber in W.China.

Abies excelsa Lam. → *Picea excelsa* Link.

Abies grandis Lindl. Grand Fir, Lowland White Fir. (Pinaceae). - Tree. Western N.America. Wood coarse-grained, light, not strong, soft, not durable, light brown; used for interior finish of buildings, wooden-ware and packing cases. Source of pulpwood.

Abies lasiocarpa (Hook.) Nutt. Alpine Fir, Nutt. Rocky Mountain Fir, (Pinaceae). - Tree. Western N. America. Bark is source of a gum; used as antiseptic on wounds. Young twigs and leaves were burned as an incense by the Crow Indians. Wood 1st source of wood pulp.

Abies magnifica Murr., Red Fir (Pinaceae). - Tree. Pacific Coast Area of N.America. Wood soft, not strong, light, fairly durable, light red-brown; used for fuel; manufactured into lumber for cheap buildings, and for packing cases; source of pulp-wood.

Abies nobilis (Dougl.) Lindl., Noble Fir. (Pinaceae). - Tree. Pacific Coast Region of N. America. Wood hard, strong, close-grained, light pale brown, red streaked; used for manuf. of lumber, often sold under the name of Larch; employed for interior finish of buildings, for packing cases, sash and door stock, Venetian blinds, ladder rails, aircraft-construction and to a limited extent for wood pulp.

Abies pectinata DC (syn. *Abies alba* Mill.), Silver Fir. (Pinaceae). - Tree, Europe, Asia Minor. Wood yellowish to reddish-white, soft, light, easily split, very elastic, not easy to bend, fairly durable; used for construction work, furniture, masts, matches, boxes, coopers work. Source of cellulose, pulpwood. Strassburg Turpentine is mainly produced from this tree in the Vosges. Principal Christmas tree in most countries of Europe. Leaves are source of Silver Pine Needle Oil, obtained by distillation; used for bath salts, bath tablets, bath balsams, room and theater sprays; in medical preparations used for healing and disinfecting. Can be blended with Eau de Cologne, lavender water and also with Chypre type perfumes. When inhaled is used for catarrh, colds and asthma; also sometimes used in cough drops.

Abies procera Rehd. → *A. nobilis* (Dougl.) Lindl.

Abies recurvata Mast. (Pinaceae). - Tree. W. Szechuan, in the Ming Valley (China). Wood close-grained, easily worked; used in China for construction of houses.

Abies religiosa (H. B. K.) Schlecht and Cham. (syn. *A. hirtella* Lindl.), Sacred Fir. (Pinaceae). - Tree. Mexico. Source of Aceite de Palo, an oleo

resin; used in medicin for its balsamic properties. Also ingredient for paints. Wood used for building purposes and manuf. wood pulp.

Abies sachalinensis Mast. (Pinaceae). - Tree. Sachalin and Japan. Much used in Hokaidô (Jap.) for building purposes, manuf. wood pulp, ship building, water works, cooperage, household furniture, packing boxes, matches and wood shavings.

Abies squamata Mast., Flaky Fir. (Pinaceae). - Tree. Tibet, China esp., W. Szechuan. Wood of good quality; used in Tibet for construction of houses.

Abrasin Oil → *Aleurites montana* Willd.

Abrin → *Abrus precatorius* L.

Abroma angusta L. f., Cotton Abroma, Ramie sengat. (Sterculiaceae). Semiwoody plant. Malaysia. Bark source of a fibre, having some commercial value. Resembles jute, a good cordage fibre; used for clothes lines. Juice of the plant is said to be used in some parts of India for indysmenorrhea.

Abroma Mariae Mart. → *Theobroma Mariae* Schum.

Abronia fragrans Nutt. (Nyctaginaceae). Herbaceous plant. Western N. America, esp. California. Ground roots mixed with corn were consumed by the Indians.

Abronia latifolia Esch. (syn. *A. arenaria* Menz.), Yellow Sandverbena, Seacoast Abronia. (Nyctaginaceae). - Herbaceous perennial. California. Stout roots were used as food by the Chonook Indians.

Abronia, Seacoast → *Abronia latifolia* Esch.

Abrus precatorius L. (syn. *Abrus* [L.] Wight.) Crab's Eye, Indian Liquorice, Rosary Pea, Jequirity. (Leguminosaceae). - Vine. Tropics of Old and New World. Bright colored black and red seeds are used for beads. Roots called Wild or Indian Liquorice are used as substitute for Liquorice; they contain glycyrrhizin. Seeds contain abrin, a toxalbumin, an exceedingly poisonous substance; very small amounts when brought into contact with wounds may be fatal.

Abrus pulchellus Wall. (Leguminosaceae). - Vine. India to S. Australia. Roots used in Malaysia as liquorice.

Absinthe → *Artemisia Absinthium* L.

Absinthe, Algerian → *Artemisia Barrelieri* Ben.

Abu Beka Resin → *Gardenia lutea* Fresen.

Abura → *Mitragyna stipulosa* Kuntze.

Abuta Candollei Triana and Planch. (syn. *A. rufescens* DC.). (Menispermaceae). - Vine. Guiana. The whitish roots are source of White Pereira. Used in medicine.

Abutilon asiaticum G. Don. (Malvaceae). Shrub. Tropics. Stem is source of a fibre; used for manuf. sacks and paper.

Abutilon Avicennae Gaertn. Chingma (Malvaceae). - Annual herb. Tropics. Much cultivated in China. Source of a fibre, called China Jute or Indian Mallow, being grayish-white, coarse and strong; used in the same way as jute; also employed for caulking boats.

Abutilon Bedfordianum St. Hil. (Malvaceae). - Shrub. Brazil. Stem is source of a fibre; used for cordage and manuf. paper. Introd. in Australia.

Abutilon indicum Sweet., India Abutilon, Country Mallow. (Malvaceae). - Shrub. Malaysia. Source of a fibre; easy to ret. Fibres are white, strong; made into cordage when derived from matured stems and woven into fabrics when derived from young stems. Takes dyes readily.

Abutilon intermedium Hochst. (syn. *A. angulatum* Mast.) (Malvaceae). - Shrub. Tropics. Bark source of a fibre; used in Madagascar for manuf. cloth.

Abutilon Jacquinii G. Don. (syn. *A. lignosum* [Cav.] G. Don.). (Malvaceae). - Half shrub. Texas, Mexico and West Indies. In W. Mexico stems are source of a fibre; used for manuf. twine and rope.

Abutilon molle Sweet. (Malvaceae). - Shrub. S. America, esp. Brazil and Peru. Stem is source of a fibre; used for cordage.

Abutilon muticum Sweet. (syn. *A. asiaticum* Guill. and Pierre.) (Malvaceae). - Small tree. Tropics. Seeds are consumed by the Nomads in Sudan.

Abutilon octocarpum F. v. Muell. (Malvaceae). - Perennial plant. Australia. Bark is source of a fibre; used by the aborigines of Queensland for game netting.

Abutilon oxycarpum F. v. Muell. (Malvaceae). - Shrub. S. America, esp. Brazil also Australia. Occasionally cultivated. Source of a fibre, used for manuf. sails. Also *A. venosum* Lem.

Abutilon polyandrum G. Don. (Malvaceae). - Shrub. Trop. Asia, esp. India and Ceylon. Stem is source of a fibre; used for manuf. sails.

Abyssinian Myrrh Tree → *Commiphora abyssinica* (Berg.) Engl.

Acacia abyssinica Hochst. → *A. glaucophylla* Steud.

Acacia acuminata Benth., Raspberry Acacia. (Leguminosaceae). - Tree. W. Australia. Source of charcoal. Wood used by aborigines for weapons. Fragrant flowers have been suggested as a source of perfume.

Acacia albida Delile. (Leguminosaceae). - Tree. N. Africa. Twigs and leaves are used as camel food. Bark is employed in tanning. Stem is source of a Gum Arabic also called Gomme de Sénégal.

Acacia aneura F. v. Muell., Mulga Acacia. (Leguminosaceae). - Tree. Australia. Ground seeds are consumed as food by the aborigines of S. Australia. Wood was employed for making spear-throwers. Leaves are used as food for live-stock, also *S. salicina* Lindl.

Acacia Angico Mart. → *Piptadenia rigida* Benth.

Acacia angustissima (Miller) Kuntz. (syn. *Mimosa angustissima* Miller), Prairie Acacia. (Leguminosaceae). - Large shrub. S. of United States, Mexico, Centr. America. Bark used for tanning in Oaxaca (Mex.). Pods consumed as food by Mazatecs, Chinantecs and other tribes in Mexico.

Acacia arabica Willd. (syn. *A. nilotica* Delile), Babul Acacia. (Leguminosaceae). - Tree. Trop. Africa. Wood heavy, hard, durable, close-grained, red-brown to deep red, resistant to water and white ants; used for sugar and oil presses, rice-pounders, agricultural implements, tool-handles, wheels, railroad-ties. Was used in Ancient Egypt since time immemorial for house-beams, statues, panelling and boats. Leaves and green pods are a food for camels, sheep and goats. Young bark is source of a fibre, Pods and bark are employed in tanning leather; called Bablah or Neb-neb; it is also used for dyeing clothes a yellow color. Stem is source of a soluble gum, called under various local names, Amrad, Amrawatti, Brown Barbary Gum. Tears are of moderate size, often vermiform, light dusky brown tint. Seed with dates are sometimes made into a fermented beverage.

Acacia, Babul → *Acacia arabica* Willd.

Acacia Bidwillii Benth. → *A. pallida* F. v. Muell.

Acacia binervata DC. (syn. *A. umbrosa* Cunningham.) Twinvein Wattle, Black Wattle. (Leguminosaceae). - Tree. New South Wales, Queensland. Bark source of valuable tanning material. Also *A. calamifolia* Sweet, *A. dealbata* Link., *A. harpophylla* F. v. Muell., *A. pycnantha* Benth., *A. podaliriae* Cunningham. Wood of *A. binervata* is tough, light, close-grained; used for axe handles, bullock yokes.

Acacia calamifolia Sweet → *A. binervata* DC.

Acacia Catechu Willd., Catechu. (Leguminosaceae). - Tree. E. India. Source of Catechu, Black Catechu, Black Cutch, Pegu Catechu being an extract from the heartwood. Used for tanning, toilet preparations, dyeing fabrics of a black or brown color, also for staining of wood. Used medicinally as astringent, for diarrhea, sore throat. Contains gum catechin, catechu tannic acid, catechu red and quercin. Also from *Acacia suma* Kunz. It is sometimes called Terra Japonica a name also applied to *Uncaria Gambier* Roxb.

Acacia Cavenia Bert., Cavenia Acacia, Espino Cavan. (Leguminosaceae). - Small tree. S. America, esp. Chile. Allied to *A. Farnesiana*. Cultivated.

Source of a perfume, Cassie Romaine, obtained by petroleum ether extraction; about 200 kg. flowers produce 1 kg. concrete and 300 gr. absolute ess. oil. Application is the same as *A. Farnesiana* oil (Cassie Ancienne), though it is less fine and has a more spicy character. Much is derived from S. France.

Acacia cibaria F. v. Muell. (Leguminosaceae). - Tree. Australia esp. W. Australia, New South Wales. Seeds are eaten by the natives of Australia. Also *A. longifolia* Willd.

Acacia cineria Spreng. → *Dichrostachys cinerea* Wight and Arn.

Acacia concinna DC., Soap Pod. (Leguminosaceae). Prickly shrub. India. Pods are widely used as detergent for washing silks and woollen goods, washing hair and cleaning silver plates.

Acacia conferta Cunningham. (Leguminosaceae). - Australia. Flowers have been suggested as a source of perfume. Also *A. harpophylla* F. v. Muell. and *A. pycnantha* Benth.

Acacia Cunninghamii Hook., Kowarkul, Bastard Myal. (Leguminosaceae). - Tree. Australia, esp. New South Wales, Queensland. Wood close-grained, takes a good polish; used for cabinet work.

Acacia dealbata Link. Silver Wattle. (Leguminosaceae). - Shrub or tree. S. Australia. Produces a gum exceedingly viscose and as useful as Gum Arabic. Also *A. binervata* DC., *A. decurrens* Willd., *A. elata* Cunningham., *A. glaucescens* Willd., *A. harpophylla* F. v. Muell., *A. pycnantha* Benth.

Acacia decora Reichb., Graceful Wattle Acacia. (Leguminosaceae). - Tree. Australia. Gum from the stem is consumed by the aborigines of N. Queensland. Also *A. homalophylla* Cunningham.

Acacia decurrens Willd., Greenwattle Acacia, Black Wattle. (Leguminosaceae). - Tree. Australia. Bark is used for tanning, contains 30 to 50% of tannin. Also *A. decurrens* var. *mollissima* Willd., *A. dealbata* Link, *A. saligna* Wendl.

Acacia dictyophleba F. v. Muell. (Leguminosaceae). - Tree. Australia. Seeds when pounded are used as food by the natives of Centr. Australia. Also *A. stipuliger* F. v. Muell.

Acacia doratoxylon Cunningham., Currawong Acacia. Spear Wood, Brigalow. (Leguminosaceae). - Tree. Australia. Wood tough, close grained, durable, heavy. Used for furniture, gates. Employed by aborigines for spears and boomerangs. Leaves are used as food for cattle. Scented flowers have been suggested as a source of perfume.

Acacia elata Cunningham. → *A. dealbata* Link.

Acacia Ehrenbergiana Hayne. (Leguminosaceae). - Shrub. Trop. Africa. Trunk is source of a gum.

Acacia etbaica Schweinf. → *A. nubica* Benth.
Acacia excelsa Benth., Ironwood, Brigalow. (Leguminosaceae). - Tree. Queensland. Wood close-grained, hard, very tough, elastic, violet scented. Used for cabinet-work.

Acacia falcata Willd. (syn. *A. plagiophylla* Spreng.), Burra Acacia. (Leguminosaceae). - Shrub or tree. Australia esp. New South Wales, Queensland. Used by aborigines to stupefy fish. Also *A. penninervis* Sieb., *A. salicina* Lindl.

Acacia Farnesiana (L.) Willd., Sweet Acacia. (Leguminosaceae). - Shrub or small tree. Tropics. Cultivated. Bark is used for tanning. Pods produce a black dye; used for ink and for giving leather a black color. Stems produce a second grade gum. Wood is very hard, tough; used in some parts of Africa for tentpegs, ploughs, ship's knees, cabinet work. The very fragrant Cassie Flowers are source of Cassie Ancienne, an ess. oil, used in perfumery. Much is derived from S. France. Flowers are laid between linen to impart a pleasant scent.

Acacia fistula Schweinf. → *A. Seyal* Delile.

Acacia Giraffae Willd. Giraffe Acacia. (Leguminosaceae). - Spiny shrub or small tree. S. Africa. Source of Cape Gum. Bark used for tanning. Pods are ground into flour and used as fodder for live-stock.

Acacia glaucescens Willd. → *A. dealbata* Link.

Acacia glaucophylla Steud. (Leguminosaceae). - Shrub or small tree. Trop. Africa. Stem is source of Somali Gum. Also *A. abyssinica* Hochst.

Acacia Greggii Gray., Cat's Claw. (Leguminosaceae). - Shrub or tree. Mexico and SW of United States. Source of a gum, similar to Gum Arabic, locally used. Pods produce a flour, made into cakes and consumed by the Indians.

Acacia gummifera Willd., Mogador Acacia. (Leguminosaceae). - Tree. N. Africa. Source of a resin, called Mogador or Morocco Gum. Much is derived from Morocco. Tears are usually dark colored and of a sweetish taste which do not dissolve completely in water.

Acacia harpophylla F. v. Muell., Sickleleaf Acacia. Bigalow. (Leguminosaceae). - Tree. Queensland. Source of a reddish-brown dye; stains wool and cotton.

Acacia hemiteles Benth. → *A. subcoerulea* Lindl.

Acacia horrida Willd. (syn. *A. Karroo* Hayne). Allthorn Acacia. (Leguminosaceae). - Tree. S. Africa. Wood hard, tough; used for interior finish of buildings. Bark and pods are employed for tanning, imparting a reddish color to leather. Leaves and young pods are used as food for live-stock. Stems produce a gum, used locally; resembling Gum Arabic. Tears are pale yellow, hard, brittle, irregular; giving a rather dark mucilage. Sometimes called Cape Gum.

Acacia homalophylla Cunningham., Gidgee Acacia, Spear Wood, Curley Yarran. (Leguminosaceae). - Tree. Australia. Wood dark brown, fragrant; used for turner's work, tobacco pipes and fancy articles.

Acacia Jacquemontii Benth., Khumbut, Dhakki. (Leguminosaceae). - Small shrub. India. Source of a gum, inferior to Gum Arabic. Used for calico printing and in paper making.

Acacia Karroo Hayne → *Acacia horrida* Willd.

Acacia Koa Gray., Koa Acacia. (Leguminosaceae). - Tree. Hawaii. Wood hard; used by natives for spears and fancy paddles.

Acacia laeta R. Br. → *A. Senegal* (L.) Willd.

Acacia leucophloea Willd., Arinj. (Leguminosaceae). - Large tree. India, Burma. Source of a gum, used for adulterating gums of better quality.

Acacia leucophylla Lindl. → *A. pendula* Cunningham.

Acacia longifolia Willd. → *A. cibaria* F. v. Muell.

Acacia melanoxylon R. Br., Blackwood, Black Sally. (Leguminosaceae). - Tree. Australia esp. Tasmania, S. Australia, Victoria, New South Wales. Wood close-grained, hard. Used for furniture, cabinet-work, boat-building, tool-handles, oil-casks, naves of wheels, pianofortes, parts of organs, billiard-tables; cut into veneers. Takes a fine polish.

Acacia mellifera Benth. → *A. Senegal* (L.) Willd.

Acacia modesta Wall. (Leguminosaceae). Medium sized tree. Sub-Himalaya, Plains of N. Punjab. Source of a useful gum, Amritsar Gum, mainly derived from Punjab. Used in India as medicine.

Acacia myriadena Bert. → *Serianthes myriadena* Planch.

Acacia Neboueb Baill. → *A. stenocarpa* Hochst.

Acacia nilotica Delile → *A. arabica* Willd.

Acacia nubica Benth. (Leguminosaceae). - Shrub. Red Sea area, Sudan. Bark is used for tanning. Also *A. etbaica* Schweinf.

Acacia Oswaldii F. v. Muell. Umbrella Acacia. (Leguminosaceae). - Tree. Australia. Seeds are consumed as food by the aborigines of Australia.

Acacia pallida F. v. Muell. (Leguminosaceae). - Tree. Australia. Young roots when roasted are consumed as food by the aborigines of N. Queensland. Also *A. Bidwillii* Benth.

Acacia pendula Cunningham. (syn. *A. leucophylla* Lindl.), True Myall, Boree. (Leguminosaceae). - Tree. Australia esp. New South Wales, Queensland. Wood close-grained, hard dark, beautifully marked, scent of violets. Used for veneers, fancy boxes, tobacco pipes. Leaves are used as food for live-stock.

Acacia penninervis Sieb. → *A. falcata* Willd.

Acacia plagiophylla Spreng. → *A. falcata* Willd.

Acacia podaliriaeifolia Cunningh. → *A. binervata* DC.

Acacia pycnantha Benth., Golden Wattle. (Leguminosaceae). - Shrub. Australia. Bark is used for tanning leather. Stem and branches are source of Australian or Wattle Gum, also *A. decurrens* Willd., *A. homalophylla* Cunningh.

Acacia Rehmanniana Shinz. → *A. Senegal* (L.) Willd.

Acacia Roemeriana Scheele. (Leguminosaceae). - Shrub. Mexico and SW United States. Flowers are source of a valuable honey in some parts of Texas.

Acacia rivalis J. M. Black. (Leguminosaceae). - Tree. Australia. Gum is consumed by the aborigines of S. Australia. Also the seeds are eaten as food when being ground.

Acacia salicina Lindl. → *A. aneura* F. v. Muell., *A. falcata* Willd.

Acacia saligna Wendl. → *A. decurrens* Willd.

Acacia samaryana Chev. → *A. Senegal* (L.) Willd.

Acacia Senegal (L.) Willd. (syn. *A. Verek* Guill and Perr.). Gumarabic *Acacia*. (Leguminosaceae). - Shrub or small tree. Trop. Africa. Source of a resin called Gum Arabic, known as Kordofan, Chezirch Gum, Prickly Turkey, White Senaar, Senegal Gum, Gomme Blondes, Gomme Blanche. Is harvested from December until June. Much is derived from the Sudan. Gum is often graded in Middle, White, Middle Siftings, Very Large, Large and Small. Used for lustre to crape and silk, thickening colors, calico printing, manuf. ink, mucilage, confectionary. Important trading centers are Senegal and Kordofan. Less quantities are produced by *A. laeta* R. Br., *A. mellifera* Benth., *A. Rehmanniana* Shinz., *A. samaryana* Chev., *A. campylocantha*.

Acacia Seyal Delile (syn. *A. Fistula* Schweinf.), *Seyal Acacia*. (Leguminosaceae). - Small tree. Trop. Africa. Stem is source of a Gum Arabic, known in the trade as Suakim, Talca, Sennarr, Talha and Talki Gum. It is said that elephants feed on the pods.

Acacia Sieberiana DC. (Leguminosaceae). - Tree. Trop. Africa. Stem is source of a pale yellow to yellowish brown, soluble gum.

Acacia spirocarpa Hochst. (Leguminosaceae). - Tree. Trop. Africa. Bark is source of a strong fibre; used by the natives of Africa.

Acacia stenocarpa Hochst. Narrowwing *Acacia*. (Leguminosaceae). - Small tree. E. Africa. This is one of the species being a source of Gum Arabic of commerce, sometimes called Gomme Salobreda. Also *A. Neboueb* Baill.

Acacia stipuligera F. v. Muell. → *A. dictyophleba* F. v. Muell.

Acacia subcoerulea Lindl. (syn. *A. hemiteles* Benth.) Blue-leaved *Acacia*. (Leguminosaceae). - Tree. W. Australia. Source of a yellow dye.

Acacia subporosa F. v. Muell. (Leguminosaceae). - Tree. Australia esp. Victoria, New South Wales. Wood tough, elastic. Used for tool-handles, gun-stocks.

Acacia tortilis Hayne. (syn. *A. fasciculata* Guill and Perr.), Sejal, Talha. (Leguminosaceae). - Shrub or small tree. N. Africa, Arabia. Source of a resin, Gomme Rouge.

Acacia umbrosa Cunningh. → *Acacia binervata* DC.

Acacia Verek Guill and Perr. → *A. Senegal* (L.) Willd.

Acacia Visco Lorentz. (Leguminosaceae). - Tree. Argentina. Wood is used for house-building and for boxes.

Acaena pinnatifida Ruiz and Pav. (Rosaceae). - Perennial plant. Chile. Infusion is used by the natives as an astringent.

Acalypha indica L., Indian Nettle. (Euphorbiaceae). - Herb. Trop. Asia, Africa. Fresh or dried plants are used medicinally as gastro-intestinal irritant; large doses are emetic. Contains acalypsin, an ess. oil, resin, tannin and an alkaloid. Acanthaceae → *Acanthus*, *Adhatoda*, *Andrographis*, *Barleria*, *Blepharis*, *Clinocanthus*, *Hypestes*, *Jacobinia*, *Justicia*, *Peristrophe*, *Rhinacanthus*, *Staurogyne*, *Strobilanthes*, *Tubiflora*, *Whitfieldia*.

Acanthocereus pentagonus (L.) Britt. and Rose. (syn. *Cereus pentagonus* L.), Pitahaya, Pitahaya Naranjada, (Cactaceae). - Xerophytic tree. East coast of Mexico, Texas, Centr. America, Northern S. America. Fruits are red, edible.

Acanthopanax ricinifolium Seem. (syn. *Kalopanax pictus* [Thunb.] Nakai.) (Araliaceae). - Tree. China, Manchuria, Korea, Japan. Wood easily worked, pliable, resonant; used in China for drums, in boats and temples.

Acanthopanax spinosus Miq. (Araliaceae). - Shrub. Japan, China. Very young leaves are eaten during spring as a vegetable in Japan.

Acanthopeltis japonica Okam. (Celidiaceae). - Red Alga. Japan. Used in Japan for the manufacture of agar. See under *Gelidium Amansii* (Lamour) Lamour.

Acanthophora specifera (Vahl.) Boeg. (Rhodamelaceae). - Red Alga. Indian Ocean. Consumed as food in the Kangean Islds., N.E. Java and Philipp. Islds.

Acanthorrhiza Warszewiczii Wendl. (Palmaeae). - Tall palm. Costa Rica, Panama. Leaves are used for thatching.

Acanthospermum hispidum DC. (Compositae). - Herbaceous plant. Brazil to Argentina. Plant is bitter and aromatic; used in some parts of S. America as diuretic and sudorific.

Acanthosphaera Ulei Warb., Balsamo (Mora-ceae). - Tree. Brazil, esp. Amazon region, E. Pe-ru. Bitter latex is used locally as febrifuge.

Acanthosicyos horrida Welw., Narasplint. (Cu-curbitaceae). - Thorny shrub. Trop. Africa. Fruits having the size of an orange; pleasant acid flavor; eaten fresh or preserved. Seeds called Butter Pits, are consumed as food by the Hottentots. Fresh fruit-pulp is used to separate casein from milk after being heated.

Acanthosyris falcata Griseb. (Santalaceae). - Shrub or tree. Argentina, Paraguay, Bolivia. Red fruits size of a cherry, are consumed by the natives; also used for making a liqueur. Wood is employed for making furniture.

Acanthus ebracteatus Vahl., Sea Holly. (Acan-thaceae). - Saltbush. Trop. Asia. Decoction of boiled leaves is used as cough medicine in some parts of Malaya. It is taken with flowers of Averrhoa, black sugar-cane, cinnamon and cry-stalline sugar.

Accra Copal → Daniella Ogea Rolfe.

Aceite de Palo → Abies religiosa (H. B. K.) Schlecht and Cham.

Aceitunillo → Aextoxicon punctatum Ruiz and Pav.

Acer campestre L., Hedge Maple. (Aceraceae). - Tree. Europe, N. Iran, Asia Minor, Algeria. Wood light-brown to reddish-white, medium heavy, very hard, tough, very difficult to split, elastic; used for cutlery, turnery, mill-wheels, tobacco pipes (Ulmer pipes), agricultural imple-ments, balls, veneer, Twigs are made into walk-ing-sticks.

Acer circinatum Pursh., Vine Maple. (Aceraceae). - Tree. Pacific Coast region of N. Ame-rica. Wood close-grained, hard, not strong, hea-vy, light brown; used for handles of axes and tools. Used by Indians for bows of fishing nets.

Acer crataegifolium Sieb. and Zucc. Hawthorn Maple. (Aceraceae). - Japan. Bark is used in Su-ruga province, Japan, as a paste in manuf. of paper.

Acer dasycarpum Ehrh. → **Acer saccharinum** L.

Acer eriocarpum Michx. → **Acer saccharinum** L.

Acer Ginnala Max. (syn. *A. tataricum* L. var. *Ginnala* Max.). (Aceraceae). - Tree. Japan, Chi-na. Young leaves are used as a tea in Japan.

Acer macrophyllum Pursh., Broad-leaved Map-le. (Aceraceae). - Tree. Pacific Coast region of N. America. Wood not strong, close-grained, soft, light, rich brown; used for interior finish of buildings, handles of axes and tools, also for furniture.

Acer mono Schum. → **Acer pictum** Thunb.

Acer Negundo L. (syn. *Negundo aceroides* Moench., *N. fraxinifolium* Nutt.). Box-Elder. (Aceraceae). - Tree. N. America. Wood not strong, close-grained, soft, light creamy white;

used for wooden ware, paper pulp, cooperage, cheap furniture, interior finish of houses. Sap is occasionally source of sugar.

Acer pictum Thunb. (syn. *A. mono* Schum.) (Aceraceae). - Tree. Japan, Korea, Amur, China. Wood hard, close-grained, yellow-white. Used in Japan for furniture, cabinet-work, interior finish of buildings, railroad cars, ship building, important as fuel. Also *A. Mayrii* Schwer.

Acer platanoides L., Norway Maple. (Aceraceae). - Tree. Throughout Europe, Caucasias, Armenia. Wood reddish-white, fine-grained, very hard, heavy, elastic, easy to polish; used for turnery, wagons, furniture and manuf. of rifles.

Acer Pseudo-Platanus L. Plane Tree Maple, Scottish Maple. (Aceraceae). - Tree. Europe, Caucasias, Armenia, Asia Minor. Wood yellowish-white, fine structure, very hard, heavy, elastic, easy to work, polishes well, fairly resi-stant to insects; used for furniture, carriages, billiard-cues, shoe lasts, violins, wood carving, floors, and for rifles.

Acer rubrum L., Red Maple. (Aceraceae). - Tree. Eastern N. America to Florida and Tex-as. Wood not strong, close-grained, very hea-vy, light brown; used for furniture, turnery, gun-stocks, wooden ware, wood pulp.

Acer saccharinum L. (syn. *A. dasycarpum* Ehrh., *A. eriocarpum* Michx.), Silver Maple, White Maple (Aceraceae). - Tree. Eastern N. America to Florida. Wood close-grained, hard, strong, brittle, easily worked; used for veneer, coope-rage, shoe-lasts, handles, spools, furniture, sporting goods, toys, motor vehicle parts, floor-ing, fuel, wood pulp. Sugar is occasionally ob-tained from the sap of the stem.

Acer saccharum Marsh., Sugar Maple. (Aceraceae). - Tree. Eastern N. America. Juice from stem is a source of maple syrup, maple sugar, used for flavoring and sweetening, different foods and candies. Much ist manuf. in the New England States. Wood close-grained, tough, hard, heavy, light brown, tinged with red; used for floors, interior finish of buildings, furniture, turnery, shoe-lasts; ship building, pegs, fuel, wood pulp.

Aceraceae → **Acer**.

Acetobacter aceti (Kützing) Beijerinck. (Bacte-riaceae). - Bacil. Microorganism. Belongs to the acetic acid bacteria. The fermentation product is acetic acid, commercially known as vinegar, cider vinegar, apple vinegar, wine vinegar, malt vinegar, sugar vinegar, glucose vinegar, spirit vinegar, distilled vinegar, grain vinegar. To this group belong several other species of *Aceto-bacter*.

Acetobacter ascendens (Henneb.) Berg. et al. (Bacteriaceae). - Microorganism. Is able to pro-duce ethanol under anaerobic conditions. Also *A. suboxydans* Kluyver and de Leeuw and *A. Pasteurianus* (Hansen) Beijerinck.

Acetobacter suboxidans Kluyver and de Leeuw. (Bacteriaceae). Bacil. Is important in the production of sorbose, a product of fermentation. Also *A. cylinum* (Brown) Beijerinck, *A. aceti* (Kützing) Beijerinck, *A. melanogenum* Beijerinck, *A. xylinoides* Heenneb. and *A. rancens* Beijerinck.

Acetone-athanol → *Bacillus acetothyllicum* Northr.

Aceton-butanol → *Clostridium acetobutylicum* McCoy et al.

Achillea Millefolium L., Milfoil, Yarrow. (Compositae). - Perennial herb. Temp. zones. Leaves are source of a tea; used in home remedies for coughs, diseases of the bladder and kidneys, also for „cleaning“ the blood; for sealing open wounds on hands, abscesses; ailments of the stomach. Herb is occasionally used in salads in soup (called Gründonnerstag-Suppe in Germany). Sometimes used in parts of Sweden as a substitute for tobacco. Leaves and flower tops are used medicinally, being a stimulant, tonic, mild diaphoretic and emmenagogue. A distilled oil, *Oilum Millefolii* is used as tonic, nervino-excitans and aromatic. Herb contains an ess. oil, and a bitter alkaloid, achilleine.

Achillea moschata Jacq., Musk Yarrow. (Compositae). - Perennial herb. Centr. Europe. Source in Italy of a liqueur, called Esprit d'Iva, Iva Liqueur, Iva Wine; in Oberengadin (Switzerl.) Iva Bitter. A tea is used as a home remedy, being tonic, stomachic, stimulant, diaphoretic. Herb contains alkaloids and an ess. oil cineol.

Achillea Ptarmica L., Sneezewort (Compositae). - Perennial herb. Temp. Europe, Asia. Cultivated. Roots formerly used as sneeze-pulver. Flower heads were employed in medicine.

Achillea Santolina L. (Compositae). - Herbaceous perennial. E. and N. Africa, Arabia, Iran. Used in Teheran, Iran for chest complaints; it is considered carminative and tonic.

Achillea sibirica Led. (Compositae). - Herbaceous perennial. Temp. N. Asia. Used in China medicinally.

Achras mammosa L. → *Calocarpum mammosum* Pierre.

Achras nigra Poir. → *Dipholis nigra* Cris.

Achras Sapota L., Sapodilla. (Sapotaceae). - Tree. S. Mexico, Guatemala to Honduras. Cultivated. Fruit edible, of fine quality, round to oval; pulp yellow-brown, soft, sweet, rich fine flavor. Stem is source of a gum; used as base for chewing gum, called Chicle.

Achyranthes aspera L. Prickly Chaff Flower. (Amaranthaceae). - Herbaceous plant. Trop. Africa, Asia, Australia. Used by the Shari Chad races (Afr.) for making salt. Macerated roots are used in India to relieve pain from scorpion stings. Leaves are eaten as vegetable in Java. Branches are source of tooth brushes in Hadra-

mut (Arabia). Ashes from plant are employed as a source of alkali in dyeing.

Achyrocline flaccida DC. (Compositae). - Herbaceous plant. S. America. Plant is used in Brazil as a tonic and excitant, also as febrifuge, antelmintic and antispasmodic.

Acid, citric → *Aspergillus niger* van Vieghe, *Citromyces glaber* Wehmer, *Citrus Limon* Burman and *Penicillium citrinum* Thom.

Acid, d'lactic → *Rhizopus oryzae* Went and Prins geerl.

Acid, lactic → *Lactobacillus Delbrueckii*.

Acid, fumaric → *Rhizopus nigricans* Ehr.

Acid, propionic → *Propionibacterium Freudenreichii* von Niel.

Ackawai Nutmeg → *Acroclidium Camara Schomb.*

Acnistus arborescens (L.) Schlecht. Tree Wild Tobacco. (Solanaceae). - Shrub. Trop. America. Fruits are edible, made into jellies.

Acokanthera Ouabaio Cathel. (Apocynaceae). - Tree. Trop. Africa, esp. Somaliland. Source of Ouabain, a glucoside; used in medicine.

Acom → *Dioscorea latifolia* Benth.

Aconite, Indian → *Aconitum ferox* Wall.

Aconite, Japanese → *Aconitum Fischeri* Reichb.

Aconitum ferox Wall. Indian Aconite. (Ranunculaceae). - Perennial herb. Himalaya region. Roots are sold in bazaars of India for medicinal purposes.

Aconitum Fischeri Reichb. (Ranunculaceae). - Perennial herb. Kamschatka. Root commercially known as Japanese Aconite. Other asiatic species used among druggists are *A. chasmanthum* Stapf., *A. laciniatum* Stapf., *A. Balfouri* Stapf. and *A. deinorrhizum* Stapf.

Aconitum heterophyllum Wall. (Ranunculaceae). - Perennial herb. Himalayan region. Herb is said to be inert and is eaten by the hill people. It is claimed to be antiperiodic, aphrodisiac and tonic. It is used in native medicine as a mild and bitter tonic; sold in bazaars of the Orient.

Aconitum Napellus L., Monkshood. (Ranunculaceae). - Perennial herb. Centr. Europe. Cultivated. Dried roots are used medicinally as a heart and nerve sedative; locally as a tincture and as analgesic. Roots are collected in the autumn or during flowering time. Much derived from Germany and Switzerland. Also the herb, *Herba Aconiti*, composed of dried leaves and flowering tops is used for the same purpose. Contains aconitine, an alkaloid. In ancient times a decoction of the poisonous herb was given to criminals.

Acorus Calamus L., Calamus, Sweet Flag, Flag Root. (Araceae). - Perennial herb. Temp. zones of Old and New World. Rhizomes are used as

flavoring agent, they are sometimes candied. Cultivated in Burma, Ceylon. Dried rootstocks come also from Russia, Netherlands, Germany, England and parts of the United States, among which Michigan, Indiana, Virginia, N. Carolina. Collected in autumn. Used medicinally as carminative, a stimulant and as an aromatic bitter tonic. Contains acorin, a bitter, viscid, aromatic glucosidal compound.

Acrocarpus fraxinifolius Wight and Arn., Pink Cedar, Red Cedar, Shingle Tree. (Leguminosaceae). - Tall tree. India to Mal. Archip. Wood used for tea-boxes, boards, furniture, shingles, building purposes; it is very hard, brown with even black stripes. Wood from some areas is more durable than that from others.

Acroceras sparsum Stapf. (Graminaceae). - Perennial grass. Malaysia. Robust herb; produces much foliage; used as food for livestock in Java.

Acrocomia mexicana Karw., Coyal. (Palmaeae). - Medium palm. Mexico to Guatemala. Fruit edible. Sold in markets.

Acrocomia sclerocarpa Mart. Paraguay Palm, Macaça, Micauba. (Palmaeae). - Tall palm. Trop. S. America, West Indies, Leeward Islds. Pulp oil and kernel oil are used for manuf. soap. When refined it is suitable for cooking.

Acrocomia vinifera Oerst. (Palmaeae). - Palm. Centr. America, esp. Nicaragua to Panama. Source of an intoxicating beverage, used since ancient times by the Indians. Fruits are eaten during times of scarcity.

Acrodiolidium Camara Schomb. (Lauraceae). - Tree. Guiana to Brazil. Fruits called Ackawai Nutmegs, are excitant, aromatic, carminative, antispasmodic, anti-diarrhetic, and antidysenteric. Wood is used for general carpentry.

Acronychia laurifolia Blume. (syn. *Cyminosma resinosa* DC., *Jambolifera resinosa* Lour.) (Rutaceae). - Small tree. Trop. Asia. Leaves when young are used as a condiment. In Cochin China leaves are put in stimulating baths, probably due to the action of an ess. oil. Bark is employed in S. Annam by fishermen for making boats water-tight. Root is supposed to be a fish poison used in Cochin China.

Acronychia odorata Baill. (syn. *Cyminosma odorata* DC., *Jambolifera odorata* Lour.) (Rutaceae). - Small shrub. Trop. Asia. Used in Annam for a fever, called benh-cum or dingue. Leaves are used as condiment in Malaysia.

Acronychia resinosa Forst. (Rutaceae). - Tree. Indo-China. Bark used for caulking boats, toughening fishing nets. Supposed to stupefy fish.

Acrostichum aureum L. Marsh Fern. (Polypodiaceae). - Tall Fern. Marshes throughout tropics. Very young leaves are eaten by natives of Borneo, Celebes, Timor. Among the Annamites the firm parchment-like fronds are dried, strung up on rods, and used in stead of straw thatch.

Actephila excelsa Muell. Arg. (Euphorbiaceae). - Small tree or shrub. Trop. Asia. Plant is source of a beverage.

Actinella biennis Gray (syn. *Actinea Richardsonii* Nutt.) (Compositae). - Herbaceous perennial. S.W. of United States. Bark of the roots was made into a chewing gum by Indians of New Mexico.

Actinella odorata Gray. (Compositae). - Perennial herb. S.W. of the United States and adj. Mexico. Decoction of flowertops was used as beverage by Indians of Texas.

Actinidia callosa Lindl. (syn. *A. arguta* Franch. and Sav., *A. Kolomitka* Maxim.). Kolomitka Vine. (Actinidiaceae). - Woody Vine. N. China, Manchuria, N. Korea, E. Siberia. Fruits, called Tara, are edible, having the size of a cherry to that of a plum. Much esteemed in some parts of China. In Siberia fruits are dried for winter use, called Kismis; they are baked in bread and pastry.

Actinidia chinensis Planch. (Actinidiaceae). - Woody vine. China, esp. Szechuan, Hupeh. Fruits are edible, of good quality, being of the size of a hen's egg; used in preserves and for jams.

Actinidia polygama Franch., Silver Vine. (Actinidiaceae). - Woody vine. China, Manchuria, Japan. Leaves boiled are eaten in some parts of Japan. Salted fruits are consumed by the Japanese. It is said that cats are fond of this plant.

Actinidiaceae → Actinidia.

Actinomycin → Streptomyces antibiotica (Waksman and Woodruff) Berg. et al.

Adam's Needle → Yucca filamentosa L.

Adansonia digitata L., Baobab, Monkey Bread, Ethiopian Sour Gourd, Cream of Tartar Tree. (Bombaceae). - Tall tree. Trop. Africa. Pulp of fruit is used as a source of food; used as food seasoner. Acid pulp is used as a rubber coagulant. It is used by pastoral tribes in Africa to curdle milk, resulting into Kwatakwari. Burnt pulp is used as a fumigant to combat biting insects on domestic animals. Young leaves are eaten in soup, also as pot-herb. Pulp is widely used in Africa as diaphoretic for fever and dysentery. In the Cameroons the bark is used for tanning. Seeds are eaten as food, they are also mixed with meal of millet. It is made into a thin gruel; also used as beverage. Pounded seeds are used in some regions as famine food. Inner bark is source of a strong fibre; used for horsegirths, cordage, tethering rope, strings of musical instruments, also source of paper material. Seeds are source of Baobab, Fony or Reniala Oil, a non-drying, golden yellow oil of pleasant taste, suitable for manuf. soap. Sp. Gr. O. 9198; Sap. Val. 190.5; Iod. No. 67.5.

Adansonia Gregorii F. v. Muell. (Bombaceae). - Tree. Trop. Australia. Seeds are eaten raw or roasted by the aborigines of Queensland.

***Adansonia madagascariensis* Baill.**, Madagascar Baobab. (Bombaceae). - Tree. Madagascar. Bark is source of a fibre. Fruits are consumed by the natives.

Aden Senna → *Cassia holosericea* Fresen.

***Adenanthera microsperma* Teijsm. and Binn.** (Leguminosaceae). - Tall tree. Java. Cultivated. Wood much esteemed, durable, very strong, hard, heavy, yellow-brown to brown-red; used for house building, furniture, bridges, rolls in sugar mills; is resistant to insects and decay. Bark is recommended for tanning.

***Adenanthera pavonina* L.**, Sandal Beadtree, Zumbic Tree, Circassian Tree. (Leguminosaceae). - Tree. India, S.E. China, Moluccas, etc. Wood called Red Sandal Wood is hard, close grained, red; used in India for house building, cabinet work, a source of red dye. Decoction of leaves is used in India for rheumatism and gout; its wood as a tonic. Bark used in Billiton for washing hair and clothes. Goldsmiths use seeds in soldering; also used for necklaces and other ornaments.

***Adenia cissampeloides* (Planch.) Harms.** (syn. *Ophiocaulon cissampeloides* Hook. f.). (Passifloraceae). - Vine. Guinea. Plant when crushed is used as fish poison.

***Adenium Honkel* A.D.C.** (Apocynaceae). Trop. Africa. Powdered roots are used in Adamaiwa to stupefy fish. In E. Sudan juice from the plant is employed for poisoning arrows. Is used in the French Sudan as ordeal poison. Contains deninine, a cardiac poison, similar to digitalin.

***Adenium multiflorum* Klotzsch.** (Apocynaceae). - Perennial herb. Trop. Africa. Used in some parts of Transvaal to stupefy fish.

***Adenium speciosum* Fenzl.** (Apocynaceae). - Perennial herb. Trop. Africa. Juice of the plant is used by the natives of Africa as arrow poison.

***Adenophora communis* Fischer.** (Campanulaceae). - Herbaceous perennial. Temp. Europe, Asia. Cultivated in Japan. Roots are eaten boiled, also used in soup.

***Adenophora latifolia* Fish.** Broadleaf Ladybell. (Campanulaceae). - Perennial herb. Siberia. Roots are consumed as food in some parts of Siberia.

***Adenophora polymorpha* Ledeb.** (Campanulaceae). - Perennial herb. Russia, Siberia, China. Used medicinally in China. Contains saponin.

***Adenophora verticillata* Fisch.** (Campanulaceae). - Herbaceous perennial. Japan, Dahuria. Roots are used as food among the Ainu.

***Adenopus breviflorus* Benth.** (Cucurbitaceae). - Vine. Trop. Africa. Fruits are used by tanners in Hausa and Yoruba (Afr.) for removing hair from the hides.

***Adenostemma viscosum* Forst.** (Compositae). - Herbaceous plant. Trop. Africa, Asia. Herb is source of a blue dye.

***Adenostoma sparsifolium* Torr.** Redshank Chamise. (Rosaceae). - Shrub or tree. Baja California (Mex.) to California. Used by the Coahuilla Indians of California for arrowheads and rabbit sticks.

***Adhatoda Vasica* Nees.**, Malabar Nut Tree. (Acanthaceae). - Small sub-herbaceous shrub. Trop. India. Herb said to have definite expectorant action, gives relief in bronchitis. Leaves when boiled with sawdust of Jack Wood are source of a yellow dye. Charcoal is used for gunpowder. Wood is made into beads.

***Adiantum aethiopicum* L.** (Polypodiaceae). - Perennial herb. Fern. Trop. Africa. Decoction is used in some parts of Cape Peninsula for coughs. Decoction of rhizomes is used by Basuto Kaffirs as an abortive.

***Adiantum Capillus-Veneris* L.**, Maidenhair Fern. (Polypodiaceae). - Perennial herb. N. temp. zone. Used medicinally as emmenagogue; as tea in chronic respiratory affections.

***Adiantum pedatum* L.**, Maidenhair Fern. (Polypodiaceae). - Perennial fern. N. America, E. Asia. Rhizome is used medicinally as a stimulant, expectorant, demulcent; contains a bitter principal, volatile oil and tannin. Was used by the Indians as aromatic, bitter, demulcent, in pectoral affections and catarrhs.

***Adina rubella* Hance.** (syn. *A. rubescens* Hemsl.) (Rubiaceae). - Tree. India, Mal. Archip. Wood hard, heavy, yellow; used for building purposes; lasts 20 to 30 years in the ground.

***Adinandra integerrima* Anders.** (Theaceae). - Tree. Burma, Indo-China, Malacca. The red wood is used in Indo-China for handles of tools and for wagon making.

***Adinobotrys atropurpureus* Dunn.** → *Whitfordiodendron pubescens* Burkil.

***Adinobotrys erianthus* Dunn.** → *Withofordiodendron eranthum* Dunn.

Adju Mahogany → *Canarium Mansfeldianum* Engl.

***Adonis aestivalis* L.**, Summer Adonis, Pheasant's Eye. (Ranunculaceae). - Annual herb. Europe, Asia. Dried herb is used medicinally as cardiac tonic, indirect diuretic. Contains adonine, a glucoside.

***Adonis vernalis* L.**, Spring Adonis. (Ranunculaceae). - Perennial herb. Europe, N. Asia. Dried herb collected in spring is used medicinally as a cardiac stimulant. Contains adonidin and several glucosides. Has the same physiological action as *Digitalis*. Also are used *A. aestivalis* L. and *A. microcarpa*.

Adzuki Bean → *Phaseolus angularis* Wight.

***Aechmea Magdalenae* André.** (syn. *Ananas Magdalenae* (André). Standl. (Bromeliaceae). - Perennial herb. Centr. and S. America. Leaves produce a tough fibre of excellent quality; used for rope and twine.

- Aegle Marmelos** Correa. Bael Fruit (Rubiaceae). Small tree. E. India. Cultivated. Fruits are size of an orange, hard shelled, soft aromatic, pleasant flavor; used for drinks and sherbets. Used medicinally for dysentery and dyspepsia.
- Aegoceras majus** Gaertn. (syn. *A. corniculatum* Blanco.) (Myrsinaceae). - Shrub. India, Malaysia to New Guinea and Australia. Bark is used as fish poison. Contains aegiceras-saponin. Wood is hard, heavy, ranging from red-brown to almost black; used for handles of knives.
- Aegopodium Podagraria** L., Goutweed, Bishop's Elder. (Umbelliferaceae). - Perennial herb. Europe, Asia; introd. in N. America. Leaves are sometimes eaten boiled, also used in salads and in soup.
- Aeolanthus heliotropioides** Oliv. (Labiateae). - Perennial herb. Trop. W. Africa. Herb is used for flavoring soups by the natives.
- Aeolanthus pubescens** Benth. (Labiateae). - Perennial herb. Trop. Africa. Cultivated. Herb is used for flavoring soup; also employed as febrifuge.
- Aerobacillus polymyxa** (Prazm.) Migula. (Bacteriaceae). Bacil. Microorganism. Is important in the production of 2,3-Butanediol which can be converted into 1,3-Butadiene; used in the production of rubber of the Buna type.
- Aerobacter aerogenes** (Prazm.) Migula. (Bacteriaceae). - Bacil. Microorganism. Is important in the production of 2,3-Butanediol. (→ *Aerobacillus polymyxa*).
- Aerva lanata** Juss. (Amarantaceae). - Shrub. Trop. Asia, Africa. Eaten as a spinach in E. Africa. Shoots are used in India in curry. Also a famine food in India.
- Aerva tomentosa** Lam. (Amarantaceae). - Shrub. Red Sea area, Trop. Africa. Woolly spikes are used in some parts of the Sudan in donkey saddles and for stuffing pillows. Roots are employed as tooth-brushes. Is used medicinally for camels and horses.
- Aeschynomene aspera** L., Sola Pith Plant. (Leguminosaceae). - Shrub. Trop. Asia. Very light pith is used in India for manuf. sun-helmets or sola-topis. Much is derived from Calcutta.
- Aeschynomene grandiflora** → *Sesbania grandiflora* (L.) Poir.
- Aeschynomene spinulosa** Roxb. → *Sesbania aculeata* Poir.
- Aeschynomene uniflora** E. Mey. (Leguminosaceae). - Perennial herb. S. Africa, India. Soft wood is used in India for manuf. helmets, toys, floats and similar products. Used in surgery for manuf. of tampons.
- Aesculus arguta** Buckl., Ohio Buckeye, Western Buckeye. (Hippocastanaceae). - Tree. Missouri to S.W. of United States. Ground seeds mixed with flour were used to stupefy fish. Decoction of inner part of fruit was employed by the Kiowa Indians (New Mex.) as a powerful emetic.
- Aesculus californica** Nutt., California Buckeye. (Hippocastanaceae). - Shrub or small tree. California. Seeds were eaten in large quantities by Indians of California. Seeds were boiled with much water to remove unpleasant taste.
- Aesculus glabra** Willd., Ohio Buckeye, Fetid Buckeye. (Hippocastanaceae). - Tree. E. United States. Wood not strong, close-grained, light, soft, whitish; used for wooden ware, artificial limbs, wooden hats and paper pulp.
- Aesculus Hippocastanum** L. Horse Chestnut. (Hippocastanaceae). - Tree. Balkan Pen. Caucasus, W. Iran, Himalaya. Cultivated. Wood very uniform, light, soft, easy to split, little elastic, not very durable; used for cutlery, furniture, for boxes, wagons, pushcarts; source of charcoal, used for gunpowder. Flowers are occasionally used as tincture for rheumatism. Seeds after removal of tannin and a glucosid, are made into flour; used for breadmaking when mixed with wheat or rye flour, consumed in time of food shortage.
- Aesculus octandra** Marsh., Yellow Buckeye, Sweet Buckeye. (Hippocastanaceae). - Tree. Eastern United States to Texas. Wood close grained, soft, light, difficult to split; used for artificial limbs, wooden hats, wooden ware, paper pulp.
- Aesculus Pavia** L. (*Pavia rubra* Poir.), Red Buckeye. (Hippocastanaceae). - Shrub or tree. E. United States. Fresh seeds were macerated in water, mixed with wheat flour and used to stupefy fish by the Indians.
- Aesculus turbinata** Blume (syn. *A. chinensis* Engl.) Japanese Horse Chestnut. (Hippocastanaceae). - Tree. Japan, esp. Hokkaidō, Honshū; China. Wood soft, light, close grained, pale yellow. Used in Japan for furniture, inlaid works, statues, spools, boxes, interior finish of buildings and cars. Decoction of seeds is used by the Ainu for washing eyes of horses when discharging matter.
- Aethusa Mutellina** St. Lag. → *Ligusticum Mutellina* (L.) Crantz.
- Aextoxicon punctatum** Ruiz. and Pav., Palo Muerto, Aceitunillo. (Euphorbiaceae). - Tree. Chile. Wood pale brown, with a reddish hue, straight grained, easy to work, finishes smoothly, durable; used in Chile for general carpentry. Afara Torminalia → *Torminalia superba* Engl. and Diels.
- Affun Yam** → *Dioscorea cayennensis* Lam.
- Aframomum angustifolium** Schum. (Zingiberaceae). - Perennial herb. Madagascar, Seychelles, Mauritius, E. Africa. Source of Madagascar Cardamon. Cultivated. Seeds used as condiment.
- Aframomum Hanburyi** Schum. (Zingiberaceae). - Perennial herb. Trop. Africa, Cameroon. Cultivated. Source of Cameroon Cardamon; used as condiment.

- Aframomum mala** Schum., East African Cardamom. (Zingiberaceae). - Herbaceous perennial. Trop. Africa. Seeds are used as a condiment.
- Aframomum Melegueta** Schum. (Zingiberaceae). - Perennial herb. Trop. Africa. Cultivated in French Guinea, Ivory Coast, Sierra Leone, Dahomey, etc. Seeds known as Grains of Paradise, are used as a condiment. Pungency of seeds is due to paradol related to gingerol.
- African Blackwood → *Dalbergia melanoxylon* Guill and Perr.
- African Bowstring Hemp → *Sansevieria senegambica* Baker.
- African Breadfruit Tree → *Treculia africana* Decne.
- African Ebony Tree → *Diospyros mespiliformis* Hochst.
- African Elemi → *Boswellia Frereana* Birdw. and Canarium *Schweinfurtii* Engl.
- African Grenadille Wood → *Dalbergia melanoxylon* Guill. and Pierre.
- African Kino → *Pterocarpus erinaceus* Lam.
- African Locust → *Parkia africana* R. Br.
- African Mahogany → *Azelia africana* Smith, *Detarium senegalense* Gmel., *Dumoria Heckeli* Chev. and *Khaya senegalense* Juss.
- African Millet → *Eleusine coracana* (L.) Gaertn.
- African Myrrh Tree → *Commiphora africana* Endl.
- African Oak → *Chlorophora excelsa* (Welw.) Benth and Hook. f. and *Oldfieldia africana* Benth. and Hook.
- African Padauk → *Pterocarpus Soyauxii* Taub.
- African Peach Bitter → *Sarcocephalus esculentus* Afzel.
- African Pepper → *Xylopia aethiopica* A. Rich.
- African Rosewood → *Pterocarpus erinaceus* Lam.
- African Sandalwood → *Baphia nitida* Lodd.
- African Starapple → *Chrysophyllum africanum* A.D.C.
- African Teak → *Oldfieldia africana* Benth. and Hook.
- African Tragacanth → *Sterculia Tragacantha* Lindl.
- African Valerian → *Fedia Cornucopiae* DC.
- African Walnut → *Lovoa Klaineana* Pierre and Sprague.
- Afrolicania elaeosperma** Mildbr. (Rosaceae). - Tree. Trop. W. Africa. Oil from fruits, called Mahogany Nuts, is recommended for manuf. of paints and varnishes. Product is sometimes called Po-Yoak Oil.
- Azelia africana** Smith., African Mahogany. (Leguminosaceae). - Tree. Trop. Africa. Wood hard, durable, exported to Europe as African Mahogany; used for cabinet work, turnery, naval construction on the Congo. Burnt pods used in Sudan for manuf. a native soap.
- Azelia bijuga** (Colebr.) Gray. (syn. *Intsia amboinensis* Thours). Fiji *Azelia*, Molucca Ironwood. (Leguminosaceae). - Tree. Pacific Islds. Wood strong, durable; used for building houses, ships, telegraph poles, furniture, bridges, packing houses; employed by the Somoans for Kava-bowls. Not suitable for marine construction.
- Azelia palembanica** Baker. (syn. *Intsia Bakeri* Prain.) Malacca Teak, Ironwood. (Leguminosaceae). Malaysia. Wood very durable, hard, and strong; close-grained, light-brown; used for high grade construction work, furniture, railroad ties, beams. Source of brown and yellow dyes; used for coloring mats and clothes.
- Agapanthus umbellatus** L. Hér. (Amaryllidaceae). - Perennial herb. S. Africa. Roots are used in some parts of Africa for heart troubles and intestinal pain.
- Agapetes saligna** Benth. and Hook. (Ericaceae). - Shrub. Temp. India. Leaves are used as a tea in some parts of India.
- Agar or Agar-Agar → *Celidium*, *Ahnfeltia*, *Gracilaria*, *Pterocladia*. As supplementary agar → *Acanthopeltis*, *Ceramium*, *Eucheuma*, *Celidium*, *Gracilaria*, *Pterocladia*.
- Agar, Macassar → *Eucheuma muricatum* (Gmel.) Web. v. Bosse.
- Agar, Sachalin → *Ahnfeltia plicata* (Huds.) Fries.
- Agaric acid → *Polyporus officinalis* (Vill.) Fr.
- Agaricine → *Polyporus* (Vill.) Fr.
- Agaricaceae (Fungi) → *Agaricus*, *Amanita*, *Armillaria*, *Cantharellus*, *Clitocybe*, *Clitopilus*, *Collybia*, *Conchomyces*, *Coprinus*, *Crepidotus*, *Flammulina*, *Gomphidius*, *Gymnopus*, *Hygrocybe*, *Hygrophorus*, *Hypholoma*, *Hyporhodium*, *Inocybe*, *Lactarius*, *Lentinus*, *Lepiota*, *Mycena*, *Oudemansiella*, *Paneolus*, *Panus*, *Pholiota*, *Pleurotus*, *Pluteus*, *Psalliota*, *Psathyrella*, *Rajapa*, *Rhodopaxillus*, *Rozites*, *Russula*, *Tricholoma*, *Volvaria*.
- Agaricus appendiculatus* Bull. → *Psathyrella Candolleana* (Fr.) A. H. Smith.
- Agaricus arvensis* Schöff. → *Psalliota arvensis* (Schöff.) Fr.
- Agaricus campestris* L. → *Psalliota campestris* (L.) Fr.
- Agaricus Canarii* Jungh. → *Oudemansiella Canari* (Jungh.) v. Hoehn.
- Agaricus decastes** Fr. (syn. *Lyophyllum aggregatus* Schöff., *Clitocybe multiceps* Peck) (Agaricaceae). - Basidiomycete. Fungus. Fruitbodies are consumed as a food in Europe and Japan. Sold in markets.
- Agaricus Djamor* Fr. → *Crepidotus Djamor* (Fr.) v. Overeem.

Agaricus luzonicus Graff. (Agaricaceae). - Fungus. Trop. Asia. Fruitbodies are consumed as food in the Philipp. Islds. Also *A. Boltoni* Copel, *A. argyrostectus* Copel, *A. manilensis* Copel, *A. Merrillii* Copel.

Agaricus marginatus Batch → *Pholiota marginata* (Batch) Quéf.

Agaricus ostreatus Jacq. → *Pleurotus ostreatus* (Jacq.) Quéf.

Agaricus pratensis Scop. → *Psalliota arvensis* (Schäff.) Fr.

Agaricus procerus Scop. → *Lepiota procera* (Scop.) Quéf.

Agarobilli → *Caesalpinia brevifolium* Baill.

Agarophyte → *Gelidium cartilagineum* (L.) Gaill.

Agarweed → *Gelidium cartilagineum* (L.) Gaill. var. *robustum* Gardner.

Agastache anethiodora (Nutt.) Britt., Giant Hysop. (Labiaceae). - Perennial Herb. Missouri and Westw. of United States. Decoction of leaves was used as a beverage by several Indian tribes.

Agastache neomexicana (Briq.) Stand. (Labiaceae). - Perennial herb. New Mexico. Leaves were used for flavoring food by the Indians.

Agathis alba Foxw. (syn. *Dammara alba* Lam.). White Dammar Pine. (Pinaceae). - Tree. Mal. Archip. Source of Manila Copal, much of the quality depends upon the age of the product, being derived from living trees or obtained from the soil in semi-fossil condition. Grades are divided into hard, semi-hard, and soft. Used for varnishing enamals and interior work. Much is derived from the Indonesia, also from the Philipp. Islds. Product is also called Singapore, Pontuik, Macasar Manilla and Boed Copal.

Agathis australis Steud., Kauri. (Pinaceae). - Tall tree. New Zealand. Wood used for houses, bridges, wharves, boats, deck-planking, masts. Stem is source of a resin, called Kauri Gum, or Kauri Copal. Much is derived from the soil in a semi-fossilized condition. Used as substitute for amber, made into mouthpieces of tobacco-pipes, small ornaments and for manuf. of varnishes, suitable for outside work. Important grades are Range Gum composed of the best copal, followed by Swamp Gum and Bush Gum; the latter being obtained by tapping living stems. The gum resin was also used as masticatory by the aborigenes of New Zealand.

Agathis microstachys Warb. (Pinaceae). - Tree. Mal Archip. esp. Java. Wood used for lumber, esp. construction work.

Agathis lanceolata Panch. (Pinaceae). - Tree. New Caledonia. Stem is source of a Kauri or Dammar Resin. Also *A. ovata* (Moore) Warb. and *A. Moorei* (Lindl.) Warb.

Agathis loranthifolia Salish. (Pinaceae). - Tree. Malaysia, Burma. Stem is source of a copal. Used in varnishes, sometimes called Manila Co-

pal; also known as Borneo, Celebes, Batjan, Molucca, Macassar, Menedo, Oli, Singapore, Labuan, Fidji, Sambas, Malengthet and Boed Copal or Manilla.

Agathis Palmerstoni F. v. Muell., Kauri. (Pinaceae). - Tree. Australia. Wood is source of lumber; used for different purposes.

Agathis vitiensis (Seem.) Warb. (syn. *Dammara vitiensis* Seem. (Pinaceae)). - Tree. Fiji Islds. Source of Resin of Fiji; resembles Manila and Macassar Copals.

Agati Sesbania → *Sesbania grandiflora* Poir.

Agatophyllum aromaticum Willd. → *Ravensara aromatica* Gmel.

Agave atrovirens Karw. (syn. *A. latissima* Jacob.). (Amaryllidaceae). - Mexico. Acaulescent herbaceous tall plant. Mexico. Cultivated. Source of Pulque and Mezcal de Pulque. Among the varieties are Maguey Manso and Maguey Manso Fino.

Agave cantala Roxb. (Amaryllidaceae). - Origin unknown. Cultivated in tropics of Old and New World. Maguey or Manila Aloë. Source of a fibre known in India as Bombay Hemp, Bombay Aloë Fibre.

Agave compluviata Trel. (Amaryllidaceae). - Acaulescent perennial herb. Source of Aguamiel and Pulque. Near Comitan, Mex. a fine liqueur, Comiteca is distilled from fermented sugar cane juice and mash.

Agave Deserti Engelm. (Amaryllidaceae). - Perennial plant. S.W. of United States and adj. Mexico. Base of leaves were roasted in mesal pits, forming a sweet juicy food, eaten by the Indians. Also *A. utahensis* Engelm.

Agave falcata Engelm. (Amaryllidaceae). - Acaulescent, perennial tall herb. Mexico. Leaves are source of an Ixtle Fibre, Tampico Fibre.

Agave fourcroydes Lemaire. Henequen Agave. (Amaryllidaceae). - Acaulescent, tall herbaceous plant. Mexico, esp. Yucatan. Cultivated. Source of an excellent commercial fibre, called Henequen or Yucatan Sisal. Used extensively for binder twine in harvesting grain crops, also employed for guy ropes and general purpose ropes. Is not suitable for pulley blocks owing to swelling when wet and due to its harshness.

Agave Funkiana Koch and Bouché (Amaryllidaceae). Nuevo León and Tamaulipas (Mexico). Source of a fibre, Ixtle de Jaumava.

Agave gracilispina Engelm. (Amaryllidaceae). - Acaulescent perennial herb. Mexico, esp. San Luis Potosi. Source of a Pulque, an alcoholic beverage. Leaves source of a fibre, called Ixtle.

Agave heteracantha Zucc. (syn. *A. Lecheguilla* Torr.) Lecheguilla. (Amaryllidaceae). - Acaulescent perennial herb. Texas and Mexico. A fibre derived from the leaves, is exported as Ixtle; used for brushes, bagging and cordage. It is also called Jaumave Ixtle.