NOTES ON THE PRODUCTS

OF

WESTERN AFGHANISTAN AND OF NORTH-EASTERN PERSIA.

BY

J. E. T. AITCHISON, C.I.E., M.D.,

LL.D. EDIN., F.R.S. LOND. AND EDIN., ETC., ETC.,

NATURALIST WITH THE AFGHAN DELIMITATION COMMISSION; BRIGADE-SURGEON RETIRED H.M. BENGAL ARMY.

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DURING my sojourn in the regions of Western Afghanistan and of North-Eastern Persia I felt extremely the want of some work to assist and guide me, and therefore it is that I propose to lay before you the information I gained whilst there, believing that it will prove useful in the future to those visiting the same countries, as well as to those who may be studying, or may wish to study, their products. I have, as you will see, placed my information in a dictionary form, as I expect that this will prove a more ready means of reference for all. The construction of the dictionary is based upon the scientific terminology, with the native and English synonyms interspersed in alphabetical order. For local work there can be little doubt, in my opinion, that the native names are invaluable, and therefore, whilst making my collections, I not only took great trouble to obtain them, but also to verify their correctness by checking, so far as lay in my power, the information received. Whenever any of these native names are authorised, as the lawyers say, "by being in the books," I have given the dictionary word in addition, in Persian characters. The other native names are transliterated in English characters, spelt according to the etymology of the word when that is known, or according to the sound as pronounced. I have tried to carry out, as far as my time would allow, the etymology of the various native synonyms, and to give in the alphabetical arrangement the word or words from which each name may be supposed to be derived.

In the transliterated native synonyms the vowels are pronounced thus:—

a, short as in *hat*, *had*.
ā, long and broad as in *far*, *father*.
e, always as in *eight*, *prey*, *obey*.
i, short as in *thin*, *win*, *spin*.
ī, as in *police*, *machine*.
o, short as in *rod*, *fog*, *frog*.
ō, long as in *rode*, *mote*.
u, always long as in *flute*, *rude*, *rural*.

When the letters *p* and *h* come together in a word, they are sounded separately and *not* as *f*.

A very short abstract of information, for assistance to further reference, will be found under the following headings:—

CATTLE, CHEMICALS, DRUGS, DYES, FIBRES, FODDERS, FOODS, FUEL, GLUE, GUMS, GUM-RESINS, HAIR, MINERALS, NARCOTICS (not employed as Drugs), OILS, RESINS, SKINS, TANNING MATERIALS, TIMBERS, TRADE, WOOL.

I cannot conclude this Preface without thanking the following officers who were also on the Afghan Delimitation Commission, and who, owing to the interest they took in my work, as well as in the products of the country, were ready at all times to furnish me with any information they might have picked up, or to discuss with me any subjects of mutual interest:—Captain A. F. Cotton, B.S.C.; Major A. C. Talbot, R.E., C.I.E.; Nawab Mirza Hassain Ali Khan, C.I.E.; and Mr Alexander Finn, Her Britannic Majesty's Consul, who at that time was on duty in Meshad.

For further information relative to some of the products of this part of the world I would refer the reader to—

Report on the Trade and the Resources of the Countries on the North-Western Boundary of British India, by R. H. Davies (now Sir Henry Davies, K.C.S.I.), Secretary to the Government of the Punjab, 1862.

Handbook of the Economic Products of the Punjab, by Baden H. Powell, H.M. Bengal Civil Service, 1868.

Supplement to the Pharmacopœia of India, by Moodeen Sheriff, 1869.

Handbook of the Trade Products of Leh, with the Statistics of the Trade, by J. E. T. Aitchison, 1874.

Terminologie Medico-Pharmaceutique, &c., par Joh. L. Schlimmer. Teheran, 1874.

The Vegetable Materia Medica of Western India, by W. Dymock, 1884.

In laying this Paper before the Society, I ought no doubt to have limited my notes to botanical matter alone, but in this I take rather the view of the man who is working in the field, and who prefers to have his information so served up to him that he has only to refer to one book, than that of the worker in the city, who prefers to keep distinct each branch of study. I have therefore to thank the Society for their great consideration and courtesy in accepting this Paper without limiting its usefulness by restricting it to botanical requirements alone.

EXPLANATIONS REGARDING THE USES OF THE VARIOUS FORMS OF TYPE.

1. The scientific nomenclature, in the alphabetical arrangement, has the generic and specific name in **heavy** type; 2. The author's name in *Italics*; 3. The natural order to which the plant belongs in SMALL CAPITALS.

4. The scientific nomenclature, that occurs through the text, is in SMALL CAPITALS.

5. English words and English synonyms that are in the alphabetical arrangement are in SMALL CAPITALS.

6. English synonyms and the English names for certain substances occurring in the text, are in the type of the text, but commence with a Capital letter.

7. All native names and native words in the alphabetical arrangement, as well as those in the text, are in *Italics*.

8. When hyphens divide a native name into parts, each part is a word which will be found in the alphabetical arrangement.

9. Such native names and words as have dictionary authority, are printed also in Persian characters.

10. Words included within brackets [ ] give the literal translation of the preceding native terms.

Āb—اب—water.
Āb-i-panīr—اب پنیر—[water of cheese], whey.
Āb-khez—اب خیز—a spring of water.
Ābnus—ابنوس—Ebony, the wood of DIOSPYROS sp.
Ābrak—ابرق—Mica.

Acacia Catechu, *Willd.* LEGUMINOSÆ.

From this tree is obtained the extract Catechu, *kāt-a-gulābī*, which is so largely imported into these regions, either *via* the Persian Gulf or directly from India, to be employed in dyeing, tanning, or as a medicine.

Acantholimon, *species.* PLUMBAGINEÆ.

The dense, spinous, cushion-like masses of several species * of ACANTHOLIMON and ACANTHOPHYLLUM, covered with a most lovely inflorescence, varying from pure white to rose pink, gave the appearance of artificial bouquets, which one was never tired of looking at, as each set of varied clusters and tints came into view. These formed much of the fodder for camels in many of the more stony and exposed localities.

Acanthophyllum macrodon, *Edgew.* CARYOPHYLLEÆ.

The root stock of this, as well as of GYPSOPHILA PANICULATA, under the same name *bekh*, is employed as a substitute for soap in the washing of clothes, woollens, &c. The root is found for sale in all the bazaars of the larger villages.

Acer, *species.* SAPINDACEÆ.

A maple, called *shakh, shaghs, shaghz*, as a medium sized tree, was found occurring in the deeper valleys of the Badghis, between Kushk and Palounda. The bark of the root is employed as a dye-stuff to produce a brown colour.

ACID—*ishkī, ishkīn, tursh, trush.*

Acorus calamus, *Linn.* AROIDEÆ.

The sweet-flag, *agar, igir, bach, waj, wach.* I did not collect this plant, but the roots are a well-known trade article from Central Asia, employed in medicine.

* "The Botany of the Afghan Delimitation Commission," *Transactions of the Linnean Society of London*, vol. iii. part i., 1888.

Āda—Ādas—ادس—the plant and pulse of LENS ESCULENTA, also sometimes applied to VICIA ERVILIA.

Ādar—ادر—fire.

Āduīa—ادویه—medicines, drugs. The plural of *dawā.*

Āduīa-deg or *āduīa-dek*—[the medicine of the mortar]. This is a well-known aromatic powder of the country, consisting of black-pepper, cumin seeds, and cinnamon carefully pounded together in a large iron mortar.

Āduīa-garm—ادویه گرم — [heating-medicines]. Condiments.

ADULTERANTS, or substitutes.

A red clay, *tawa,* is employed in adulterating the gum-resin Asafœtida. The flowers of CARTHAMUS TINCTORIUS to adulterate Saffron. The corms of COLCHICUM those of MERENDERA PERSICA. The gum-resin of MICRORHYNCHUS SPINOSUS to adulterate the drug SARCOCOLLA. The bulbs of TULIPA and ALLIUM to replace the tubers of ORCHIS. The tubers of the roots of EREMOSTACHYS LABIOSA, and other species, are employed as a substitute for those of CURCUMA ZEDOARIA. The wood of MORUS ALBA is employed as a substitute for, and passed off as Ebony, the wood of DIOSPYROS species. The roots of FERULA SUAVEOLENS are passed off as those of the true *sambal,* FERULA SUMBUL.

Aeluropus littoralis, *Parl.* GRAMINEÆ.

A useful fodder grass, met with all over the country, called in Baluchistan *kandar.* In its creeping habit of growth it much resembles the *dub* of India, CYNODON DACTYLON.

Āfīun — افیون — Opium. The inspissated juice of PAPAVER SOMNIFERUM.

Afsantīn — افسنتین — or *absanthīn.* The flower-heads of a species of ARTEMISIA.

Agar—اگر—*igir,* the rhizomes of ACORUS CALAMUS; a tuberous root; the tubers of a CYPERUS.

Agar-magar. — The tubers on the fibrous roots of EREMOSTACHYS LABIOSA and other species. This word is no doubt merely a repetition of *agar*, with the consonant thrown in for euphony.

Agaricus, *species.* FUNGI.

Large FUNGI of several species are traded with in Central Asia under the name *gharī-kun* as a specific remedy for several diseases, and as a surgical remedy for stopping bleeding. I collected quantities of XYLOPODIUM AITCHISONI. The usual locality they were found growing on was the mounds of soil erected by white ants (TERMITES); these were considered as good for food, but the natives said that they were usually only collected by the dealers in drugs.

Agriophyllum latifolium, *Fisch. et Mey.* CHENOPODIACEÆ.

Charkho, chīrkho.—This is the plant of the sand-hills of Baluchistan, that used to be seen being rolled across the desert flats, carried by the wind hither and thither, and occasionally met with in sheltered localities drifted into great heaps. It had been called by the mission the "wanderer" before we knew the native name for it, which means the spinner, or the spinning about one. In Persia during autumn GUNDELIA TOURNEFORTII was seen being driven about in the same way, but being a much larger plant, was apt to produce by its gyrations a panic amongst cattle.

Agropyrum cristatum, *Boiss.* GRAMINEÆ.

Valuable as a fodder grass.

Āhak—اهک—lime.

Āhan—اهن—*āhun*, iron.

Āj—اج—a little, a small quantity.

Ājkān—an umbelliferous fruit, collected in Afghanistan and in the jungles of Balkh, employed medicinally, said to be the same as *ajwain*.

Ājwain—اجوین—the plant CARUM COPTICUM, and its fruit.

Ak—this final syllable made by adding the letter *k*—ک—to a Persian word gives the diminutive; as

mekh—ميخ—a nail; *mekhak*—ميخک—a little nail, a clove.

Akal—عقل—memory, wisdom.

Ākal—اکل—(Arabic) provisions, victuals.

Ākhkūk — اخکوک — Apricots, the fruit of PRUNUS ARMENIACA, when collected in an unripe state, and dried.

Ākhkūsh—اخکوش—unripe fruit.

Āl, ul—ال—the Arabic for the English article, "the."

ALABASTER—*marmar-i-safed, malmal-i-safed, sang-i-marmar*, or *sang-i-malmal.*

At the encampment at Zaru, we found a fakir's shrine and other graves covered with fine specimens of a very pure white alabaster, also great pieces of limestone composed of layers of different colours, along with some good pieces of chrysolite; all these were indifferently called *sang-i-malmal.* We met with similar specimens in several places to the south of, and along the Helmand. These were all said to have been brought from a place in the vicinity called Rewat, whence these stones are carried to great distances as shrine offerings. Between the hills of Malikdan, near Galicha, is said to be a salt-mine, from which Alabaster, Gypsum, and other minerals were taken to Cabul for the purpose of finishing a mosque lately built there.

Ālaf—علف—grass, herbs, forage, hay, or straw.

Ālaf-i-shīrāg—[the grass, milk herb], EUPHORBIA CÆLADENIA.

Ālaf-kharez—[the fodder of the conduit], the Hawthorn, CRATÆGUS OXYACANTHA.

Ālaf-khez—[the fodder of the spring], the Hawthorn.

Alhagi camelorum, *Fisch.* LEGUMINOSÆ.

The camel-thorn, *khār, khār-i-buz, khār-i-buze, shuthar-khār.* One of the most common and prolific shrubs met with over the whole country from Quetta to Bala-morghab and Meshad. Where it grows in luxuriance it is from three to four feet in height, and covers vast tracts of country. In

cultivated land it is a troublesome weed, where whilst the corn is standing it is invisible, but upon the crop being cut it is seen to occur in dense masses. After all other shrubs and plants have dried up owing to the autumnal hot winds, this still remains of a vivid green, and is eagerly sought for as fodder by camels, donkeys, and goats. During certain seasons, and in special districts, when its fruit is beginning to ripen, the whole shrub becomes covered with tears of glass-like beads, the largest the size of a pea; this is the manna produced on this shrub, called in these parts *tar-anjabīn*, which is very extensively collected, both for local consumption and exportation.

Alk, alak—عاک—*ālk, ālak, ilk*—اک—a resin, gum-resin, or mastich, Olibanum or Frankincense, Spikenard, Nardostachys Jatamansi.

Ālk-ul-labān—اک ال لبان—[the milk resin], Olibanum or Frankincense, the gum-resin of Boswellia species.

Ālk-undaru, alk-kundaru, alk-kundar—[the resin, a remedy for bleeding], Olibanum or Frankincense, the gum-resin of Boswellia species.

Alkali, see Barilla.

Allium cepa, *Linn.* Liliaceæ.

The Onion, *pīāz*, met with cultivated in all gardens, as a vegetable is much relished by the natives.

Allium M'Leanii, *Baker.* Liliaceæ.

The bulbs of this species, with no doubt that of others, are collected in southern Afghanistan and exported to India to be sold under the name of *badsha-sālab*, or *ambar-kand*, as a substitute for Orchis tubers. See *Annals of Botany*, vol. iii., No. X., May 1889, page 149; *Trans. Bot. Soc. Edin.*, xvii. 434.

Allium sativum, *Linn.* Liliaceæ.

Garlic, *sīr; lahsan* (Hind). Is cultivated in all gardens.

Allium, *species.* Liliaceæ.

A red dye, for dyeing silk thread with, is said to be obtained from a species of Allium. I regret that at the time

I took little note of this matter, as since then I have seen that on the juice of certain ALLIUMS being exposed to the action of the air it takes on a bright red colour.

Allium xiphopetalum, *Aitch. et Baker.* LILIACEÆ.

A strongly garlic-scented plant, collected and eaten as a vegetable by the natives, who look upon it as a sort of garlic, hence its name *sīr-pīāz-ak.*

Ālmlōk, ālmaluk—الملوك—In Afghanistan the fruit of DIOSPYROS LOTUS is so called. A cherry in Arabia.

ALMOND. The fruit and kernal of PRUNUS AMYGDALUS.

Althæa Hohenackeri, *Boiss.* MALVACEÆ.

An indigenous shrub, with handsome large flowers, clumps of which are very showy and characteristic of the country in which it grows, resembling much our cultivated Hollyhocks.

Althæa lavateræflora, *D.C.* MALVACEÆ.

The flowers *gul-i-khatmī,* the seeds *tukhm-i-khaira,* or *khair, khairu, kheru,* the roots *resha-khatmī.* A cultivated plant usually grown on the ridges between fields. It is grown not only for the showiness of its flowers, but for the petals, which are collected as they fall off the plant, as well as for the seeds, and for its roots, all of which are exported, or employed in local medicine.

Althæa officinalis, *Linn.* MALVACEÆ.

The Marsh-mallow, *khadmī.* In the Harirud valley, not uncommon near villages and in wet soil. The petals are collected to be employed in medicine.

Āltīb, or *Ultīb*—الطيب—can this be a corruption, and contraction of the Arabic word *āllatīm*—اللطيم—ال لطيم—meaning the musk, or any odour with which they perfume the temples?

Ālu—الو—a plum, the fruit of PRUNUS species. In Hindustani a potato.

Ālu-bālu—الوبالو—[mole-like plum].

The bitter Cherry, fruit of PRUNUS CERASUS, var.

Ālu-bokhāra—[the Bokhara plum].

By this is usually understood a dried plum or prune, fruit of a PRUNUS species; but this term is also applied to the fresh fruit.

Ālucha—الوچہ—[a little plum], the fruit of several species of PRUNUS.

Ālu-sīa — الوسیہ — [black-plum]. A large, deep purple, almost black-coloured plum, a very excellent grafted fruit; PRUNUS species.

ALUM—*zama, zuma, zamch, khourī.*

Imported in some quantities to this country to be employed in dyeing, also in medicine. It is said to be manufactured in Kohistan, but that the greatest bulk of it is imported through Persia from Bombay.

AMARANTH. The plant AMARANTUS PANICULATUS.

Amarantus paniculatus, *Linn.* AMARANTACEÆ.

The Amaranth, *tāj-kharus,* occurs only as a cultivated plant, usually seen thinly scattered through melon and tobacco fields, both the red and yellow flowered varieties. I never met with what I should consider a regular crop of the plant, but it occurred through fields rather as if the natives held, in superstitious veneration, the necessity of growing a few of these plants sparsely spread through their fields. The seed is eaten cooked, and the leaves employed as a pot-herb.

Āmbarud—امبرود—a pear, the fruit of PYRUS species.

Ambar-kand, probably a contraction for *ambarud-kand* [the pear-shaped testicle]. The bulbs of an ALLIUM species, sold as a Salep in Bombay. The word *kand* here corresponding exactly to the Arabic word *sālab* or fox's testicle as applied to the tubers of an ORCHIS.

AMBER—*kāh-ruba, kāh-rewah.*

Worn in the form of beads as amulets, and employed in medicine. Imported to these parts chiefly through Persia.

AMMONIACUM—the gum-resin of DOREMA AMMONIACUM.

Ammothamnus Lehmanni, *Bunge.* LEGUMINOSÆ.

Called by the natives *talkhak,* meaning bitter-weed; no animals seem to eat this, or yet SOPHORA PACHYCARPA, plants which, except in the flowering or fruiting stages, can scarcely be distinguished from each other.

Āmrucha —امروچه— [small pear]. The term is technically applied to the indigenous pear tree, and its fruit, PYRUS species.

Āmrud—امرود—the cultivated pear of gardens, and its fruit; PYRUS COMMUNIS.

AMULET—beads of Amber, pieces of CELTIS wood, and seeds of CÆSALPINIA BONDUC are usually worn as amulets or charms.

Ānāb—عناب—the fruit and tree of the Jujube, ZIZYPHUS VULGARIS.

Anabasis eriopoda, *Benth. et Hooker.* CHENOPODIACEÆ.

Ishlan, ishlun, ishlun-i-bandak.—By burning certain Chenopodiaceous shrubs is obtained a coarse Barilla. This plant is the one considered as giving the greatest yield, and the best in quality of the alkali.

Anabasis, *species.* CHENOPODIACEÆ.

Herbarium specimens Nos. 54, 42, 1884. The shrub called *lā-rag,* and an ANABASIS on the Helmand was called *trīthk* and *gulmai;* all these were said to be employed in the manufacture of Barilla.

Ānār—انار—the shrub and fruit of the Pomegranate, PUNICA GRANATUM.

Anchusa Italica, *Retz.* BORAGINEÆ.

A very handsome weed in cornfields, the corollas collected to be exported, and employed in local medicine, *gul-i-gao-zabān.*

Andar—اندر—more or most rare (Arabic).
Andar-ultīb, converted sometimes to *Indarlutīb* [the rare scent]. The root stocks of VALERIANA WALLICHIANA.

Andropogon laniger, *Desf.* GRAMINEÆ.

A highly-scented, aromatic grass, by no means uncommon all over the dry country; readily noticed when crushed under foot by its odour.

Angabīn—انگبین—Honey.
Angrez—انگریز—English.
Angur—انگور—Grapes, the fruit of VITIS VINIFERA.
Angurak—انگورک—a small grape, or grape-like. The fruit of ASTRAGALUS GOMPHOLOBIUM.
Anguza—انگوزه—the gum resin of FERULA FŒTIDA; Asafœtida.
Anguza-kema—the plant FERULA FŒTIDA.
ANILINE—*jaohar.*

These dyes are very largely employed in these parts, for which purpose they are greatly imported into this country; although it is generally reported that, in Persia at least, the Government punish those found employing them.

ANISE, ANISEED—*bādīān*—the fruit of PIMPINELLA ANISUM.
Anjadān—انجدان—an umbelliferous fruit, collected to be employed in medicine and as a condiment; also called *gul-pār.*
Anjīr—انجیر—a fig, the fruit and shrub FICUS CARICA.
Anjīr-kōhī—the indigenous [hill fig], FICUS CARICA.

Anzarut—انزروت—*anzerut, anzrud,* the drug SARCOCOLLA; also the resin of a pine from India.

Āo—او—water.

Āo-karut—اوقروت—the whey that separates from the curd of sour butter milk or Oxygal. The same name is also applied to a preparation made with the whey and liquorice, which is a common household remedy.

Āol, āul, āwal—the shrubs PRUNUS EBURNEA and PRUNUS BRAHUICUS.

Āoras—اورس—the tree Juniper, JUNIPERUS EXCELSA.

Āo-tarnak — a Turkoman term for EUPHORBIA CÆLADENIA.

Apium graveolens, *Linn.* UMBELLIFERÆ.

Celery, a common herb on the sides of water-courses, near the water.

Apocynum venetum, *Linn.* APOCYNACEÆ.

Dum-i-roba, dum-i-gosāla, gāo-gosh; kundār (Turkomani).—A perennial shrub, with an underground creeping stem that throws up annual shoots from four to five feet in height; growing in a wet clay soil, in brackish water.

From the fibre of the annual shoots the natives make twine and rope; and a tribe of Turkomans, named Kazak, who live at Kala, east of Bokhara, make a cloth. This cloth is here known by the term *katān;* but it must be remembered that this term by the Persians is usually applied to linen made from flax. The bark of the underground stem is employed in tanning and preparing skins which are intended for holding water. The local native names allude to the appearance of the ripe seed, whereas the Turkoman name signifies that it is a fibre-producing shrub, as this name is by them applied to other plants also that yield fibres.

The late Colonel Prejvalski, the celebrated Russian traveller, mentions a cloth being made at Lob-nor from the fibre of an Asclepiad; and Sir Douglas Forsyth, in his Yarkand report, mentions a cloth called *Luf;* both of these I believe to be the produce of the above fibre, as the plant

has a very wide range of habitat, extending from Venice on the Adriatic eastwards through Persia, Southern Russia, Songaria, Afghanistan (where I collected it), eastwards through Western Thibet, and in China. Messrs Cross and Bevan, consulting chemists, report very highly on the quality of the fibre, in a letter addressed to the director of the Royal Gardens at Kew. They state: "The ultimate fibres of APOCYNUM VENETUM vary from 20 to 45 mm., making the average length a little more than flax;" and again, "this cellulose is peculiarly lustrous and very strong." Supposing the fibre to prove sufficiently valuable for the cultivation of the plant, a further inducement for doing so would be, that once planted in a fitting locality, little further trouble or outlay would be required than that expended in the original raising for several years. It would be raised by planting out portions of the underground stem, and not, as is the case with most fibres, by annual sowings. The annual shoots would yield stripes of bast and bark on an average over two feet in length. Besides, the plant prefers a wet clay soil, permeated with saline or brackish water; it could thus be raised in localities which at present are barren, owing to the presence of salt, as at the mouths of rivers where the land is occasionally flooded by the sea. Whilst in Afghanistan, I sent portions of the underground stems to the Botanical Gardens of North-Western India at Seharanpore, from which Mr Duthie raised the plant and subsequently supplied me with flowering specimens for the Herbarium at Kew.

APPLE—the fruit of PYRUS MALUS.

APRICOT—the fruit of PRUNUS ARMENAIACA.

Arak—عرق—a strong spirit prepared from raisins.

Ārcha—the tree Juniper, JUNIPERUS EXCELSA.

Ārd—ارد—or *aurd*. Flour.

Ārd-i-amrucha—flour made from the dried fruit of the indigenous Pear, PYRUS species.

Ardij—اردج—the tree Juniper, JUNIPERUS EXCELSA.

Areca Catechu. PALMEÆ.

From this palm is obtained the areca nut *supārī*, called here *sepāru;* imported in quantity to be employed with oak-

galls in the tanning of sheep-skins to which the wool is still attached. I doubt if the catechu obtained from this palm is ever imported.

Arenaria holosteoides, *Edgew.* CARYOPHYLLEÆ.

A prolific weed in wheat fields; hence the native name *gandamak*, or the wheatling. This is the name given to the locality in Eastern Afghanistan where the celebrated treaty of 1879, called Gandamak, was concluded.

Ārghawān—ارغوان—also *arghamon*—the Judas tree, CERCIS SILIQUASTRUM.

Ārī—اري—*Āra*—اره—the roots of the teeth.

Ārī-lang—the bark from the roots of a Boraginaceous plant employed in medicine.

Aristida plumosa, *Linn.* GRAMINEÆ.

Honey grass, *mazj*. A most vividly green grass, occurring in small tufts over the whole country, but most noticeable on the sand-hills of Baluchistan, no doubt from the want and scarcity of other vegetation. Greedily fed upon by sheep.

AROMATIC POWDER—*aduīa-deg.*

ARSENIC

Is met with in several forms for sale in all the larger bazaars; imported chiefly through Persia proper to these regions, to be employed for dyeing with, as a poison, or in medicine. White arsenic, *marg-i-mush.* Impure arsenic, *sankhīa.* Yellow arsenic or orpiment, *zarna, zarnīkh.*

Artemisia campestris, *Linn.* COMPOSITÆ; and
Artemisia maritima, *Linn.* COMPOSITÆ.

These two common British plants, our field and sea Artemisiæ, both called *trek*, exist everywhere over the dry and stony country, forming the chief fodder for cattle on those arid tracts; their root stocks and apparently ever dry stems, over many districts, are the mainstay of the traveller for fuel. Owing to their value for fuel they do not exist for miles round large villages, as in those places these shrubs are regularly hunted down and exterminated. As

these plants grow where little else can possibly exist, the arid desert land surrounding some villages is made more desert and barren by their removal. Camels and donkeys thrive on this fodder. Horses that are unaccustomed to this diet apparently prefer anything else, but the horses of the country seem to relish and fatten upon it.

Artemisia scoparia, *Waldst. et Kitaib.* COMPOSITÆ.

Occurred in quantity along the banks of the Helmand, *luling, gurās.*

Artemisia, *species.* COMPOSITÆ.

The drug *afsantīn* consists of the flower heads of some species of ARTEMISIA, and so does the medicine *bārang-bōīa.*

ARTICHOKE—CYNARA SCOLYMUS.

ARTICHOKE, Jerusalem—HELIANTHUS TUBEROSUS.

Āru—ارو—Hindustani for a peach, the fruit of PRUNUS PERSICA.

Arum Griffithii, *Schott.* AROIDEÆ.

Phanār. So named, as is also HELICOPHYLLUM CRASSIFOLIUM, from the likeness of their spathes to the hood of a cobra.

Arundo Donax, *Linn.* GRAMINEÆ.

Nal, nāī. This reed grows in great luxuriance all over the country, wherever there is water, and a clump is to be found cultivated in many gardens for the requirements of the household. The young leaves make good fodder, and the old ones bedding for cattle. The reeds are employed in all sorts of basketwork, whether in the construction of houses or to carry material in, for screens, as tubing for pipes, flutes, holders of gunpowder, and such like. The term *nāī* is applied more correctly to PHRAGMITES and ERIANTHUS, the reeds of which are smaller than those of ARUNDO.

Arzan—ارزن—Millet, PANICUM MILIACEUM.

Arzān—ارزان—cheap, of small value.

ASAFŒTIDA—the gum resin of FERULA FŒTIDA.

ASAFŒTIDA-SCENTED—the herb TEUCRIUM SERRATUM.

Asal — اصل — the root, origin, source. *Asul*, a medicine made up of several roots.

Asal-ālsus—pronounced *asal-āsus*—اصل السوس—the root of the Liquorice plant GLYCYRRHIZA GLABRA.

Asal-pishāk, asal-poshāk—[the source of the small bark]. The Elm, ULMUS species.

Asāl—عسل—Honey.

Asbarg—the flowers of DELPHINIUM ZALIL.

ASH—FRAXINUS OXYPHYLLA, and another species.

Ashar—عشر—or *ashīr*, any milky plant.

Ashtak—اشتک—swaddling clothes. The dried flesh of the Apricot, PRUNUS ARMENIACA, also *astak*.

Asp—اسپ—a horse.

Asp-i-kema—[the *kema*, as high as a man on horseback]. The plant DOREMA GLABRUM.

Ass (domestic), the Donkey, *khar*.

The ass in this district of Persia is to the Persian agriculturist his sole means of conveying his material and self to and from his fields, or market, as well as for ploughing his fields. In Afghanistan and by the Afghans this animal is not commonly used.

Ass (wild), EQUUS HEMIONUS.

Āstar—استر—*āstār*—استار—a mule.

Astragalus Gompholobium, *Benth.* LEGUMINOSÆ; and Astragalus species, specimen No. 1047, collected May 21, 1885.

The pods of both these species are large, as large as a good sized gooseberry, inflated and full of liquid; these are collected by the natives and eaten, being called *angurak*, and *kharbuze*. They are nice in flavour, somewhat like young green peas. As the pods ripen the fluid becomes absorbed and the pods soon become like dry leather, when the peas rattle in the interior.

Astragalus heratensis, *Bunge.* LEGUMINOSÆ, and Astragalus species, specimen No. 571, May 25, 1885.

The shrub *gabīna, kōm, kōn, kum*. These two species of ASTRAGALUS are very common in the stony soil of the Hari-

rud Valley, and Khorasan, at an altitude of 3000 feet. From them is obtained a gum called *katīra*, *gabīna*, exuding from fissures in the bark, in the form of TRAGACANTH, or on cutting across the stem it shoots out of the medullary cavity like pipe Tragacanth. This is collected in large quantities at a village called Kalla-roving near Bezd, in Khorasan, for exportation in all directions from this to India, Persia, and Turkestan, to be chiefly employed in the stiffening, glazing, and facing of local fabrics. Most of the gum sold in India as *katīra* is this, and not the product of any Indian plant. See *Pharmaceutical Journal and Transactions*, December 11, 1886, page 467.

Astragalus Holdichianus, *Aitch. et Baker.* LEGUMINOSÆ. A. KAHIRICUS, *D.C.;* A. AUGANUS, *Bunge;* A. BUCHTORMENSIS, *Pall.*

All these ASTRAGALI have long fibrous, whip-like roots, of which the bark makes splendid twine and rope, for which purposes they are employed by the natives. To obtain as much of the root entire as can be done at one operation, they employ the following plan,—they pass one end of a short loop of twine over the neck of the root, and through the other end of the loop a stick, then use the latter as a lever against the ground, the root fractures deep down in the soil, and thus pieces of from one to two feet in length are obtained. I first heard of this plan in the Kuram Valley, but only saw it put in execution here.

Astragalus hyrcanus, *Pallas.* LEGUMINOSÆ.

Udish (Baluchi). A most valuable fodder in the desert, arid tracts. The very marked pyramidal shape of this shrub, causes its recognition at long distances; at first I had the idea that this peculiar form might be due to the browsing of cattle, but this is not the case, it seems to grow naturally thus.

Astragalus Sarcocolla, *Dymock.* LEGUMINOSÆ. (*Pharmacographia Indica*, vol. i. p. 476, 1890.)

As these pages were passing through the press I only received the *Pharmacographia Indica*, in which the authors consider that Sarcocolla is the product of an ASTRAGALUS, not only from finding the fruit of an ASTRAGALUS amongst the gum, but also from the fact that "the seed when soaked in water swells, bursts, and a mass of Sarcocolla protrudes; some

of the pods are abortive and are full of the gum." Without, however, a further knowledge of the plant, I think it should not have been identified as a new species, as in all probability it will be found to be a species, already described, of Bunge.

The substance or drug called Sarcocolla in England, from the Greek, meaning "flesh-glue," is known in Persia as *anzarut, anzrud, anzerut.* It consists of pale yellow irregular minute grains, somewhat like crushed resin, or some forms of soft brown sugar, but more irregular in the size of the particles; it is said to be obtained from the surface of a spinous shrub, collected much in the same way as manna, being shaken off the shrub on to a cloth, laid on the ground for the purpose of catching the falling grains. It is eaten by the ladies of the Harem to improve their appearance, and to give the skin a gloss, but is exported as a medicine. It is said to be chiefly collected near Koin, Birjand, and Yezd, and also not far from Turbat-i-Haidri. A false *anzarut* is collected from the shrub MICRORHYNCHUS SPINOSUS.

Asus — alsus — السوس — the extract LIQUORICE, obtained from the roots of GLYCYRRHIZA GLABRA.

Aswary—the flowers of DELPHINIUM ZALIL.

Atār—عطار—a druggist, a pedlar.

Ātish—اتش—fire.

Atish-barg—اتش برگ—[fire-leaf], tinder-box. The holder of the fire-leaf.

Atish-bark — اتش برک — [fire-lightning], the steel employed in obtaining a light from flint.

Atriplex Flabellum, *Bunge.* CHENOPODIACEÆ; and
Atriplex Moneta, *Bunge.* CHENOPODIACEÆ.

Both these ATRIPLEX go by the same names, *frang, farang;* they are considered excellent vegetables by the Afghans, and I found them very good.

AUBERGINE, or Egg-plant, SOLANUM MELONGENA.

Āuranj—اورنج—the Orange, CITRUS AURANTIUM.

Avena fatua, *Linn.* GRAMINEÆ.

The wild oat, *gao-dār, jaon-dār, kīagh-dāna-dār, tak-tak, jao-tak-tak.* A common weed in corn-fields.

AXE—*tabar*.

Azād—ازاد—free, liberated.

Azān—اذان—or *azan*—اذن—lobes of the ear.

Azrak—ازرق—or *arzak*—ارزق—azure, cerulean, blue, pure limpid.

Bach—بچ—the rhizomes of ACORUS CALAMUS.

Bād—a goat.

Bād—باد—wind.

Bād-ghīs—بادغیس—a district of Afghanistan, the name meaning abundance of wind; according to Vambery the old reading was *bad-khīz*, the place where the wind rises.

Bādām—بادام—the almond, PRUNUS AMYGDALUS.

BADGER—*gōrkan*, MELES species.

Bādiān—بادیان—Aniseed, the fruit of PIMPINELLA ANISUM.

Bādiān-kohī — [the hill aniseed], PRANGOS PABULARIA.

Bādinjān — بادنجان — the Egg-plant, SOLANUM MELONGENA.

Badra-kema—the Galbanum plant, FERULA GALBANIFLUA.

Badrang-bōia—[the scented (remedy) for flatulent colic]—بادرنگ بویه—or *badranj-bōia* —بادرنج بویه —the seeds of a labiate employed in medicine.

Bādsha—بادشه—a king. When applied to a product, it means a superior kind of.

Bādsha-salap—the bulbs of a species of ALLIUM.

Bāgh—باغ—an orchard, a garden.

Bāghcha—باغچه—or *bāgh-ī-cha*, a small orchard, or garden.

Bahman—بهمن—or *buhman*. A medicine from Cabul imported into India; CENTAUREA BEHEN.

Baingan (Hind.)—SOLANUM MELONGENA.

Bajindāk, or *bijindāk*—the plants KUSCHAKEWICZIA TURKESTANICA and LEPIDIUM DRABA.

Bājrā—باجرا (Hind.)—spiked millet, PENNISETUM SPICATUM.

Bakas—بقس—*bakis*, the Box tree, BUXUS SEMPERVIRENS.

Bakhla — بخلہ — *bakhlī*, the Field-bean, VICIA FABA.

Balag, balak—بلک—a leaf.

Baland—بلند—tall, lofty, great.

Balanophora, *species.* BALANOPHOREÆ.

On the banks of the Helmand was picked up a specimen of BALANOPHORA; this a Baluchistan camel driver called *labu*, but this name is also applied by the Baluchis to an OROBANCHE.

Bālchīr, bālchōr—بال چھر (Hind.)—the root-stock of NARDOSTACHYS JATAMANSI.

Balīla— بلیلہ —Beleric Myrobalans, the fruit of TERMINALIA BELERICA.

BALL—*gol, gola, golī, gul, gulī, bandaka.*

Balourī, malourī—the Bramble, RUBUS species.

Balsamodendron Myrrha, *Nees.* BURSERACEÆ.

Yields the gum-resin Myrrh, *mur, bol.*

Balsamodendron Mukul, *Hook.* BURSERACEÆ.

This yields the *gugal* of Baluchistan.

Balsamodendron, *species.* BURSERACEÆ.

At Meshed I obtained a gum-resin, said to be imported, called *mulk-i-azrak, mukal-i-azrak, bōī-kōhī buī-kuhī;* this was a form of Bdellium. The same names were, however, applied to a fragrant gum-resin obtained at the roots of spinous shrubs, in the dry desert parts of the country, and which was unrecognisable, from the former. At Sha-Ishmaīl alone, on the 8th October, I picked up, on the gravel plains, a piece of gum-resin much resembling the Meshed products, being highly fragrant.

Bālu—بالو—a cherry, a wart, a mole.

Balut—بلوط—an oak, QUERCUS species.

BAMBOO-GRASS—*bārshonk*, PENNISETUM DICHOTOMUM.

Ban, bān— بان —*bun, bana*—a tree, a root, in Baluchistan the name for PISTACIA TEREBINTHUS, var. MUTICA.

Banaush, benaush, binaush — the Ash tree, FRAXINUS OXYPHYLLA, and another species.

Band—بند—a knot, a joint, a mound, a dyke, a dam, a weir.

Band-ak, bandakai, bandukai—EPHEDRA FOLIATA, CALLIGONUM species, and ANABASIS ERIOPODA, all so named from the joints or nodes found occurring on their stems.

Bandaka—بندقه—a little ball, or round stone.

Bāng—بانگ—*bhāng*—بهانگ—Indian hemp, CANNABIS SATIVA.

Banjan—Aubergine, SOLANUM MELONGENA.

Bānu—بانو—a lady, a princess.

Barak—برک—the fine soft hair of the camel, or a fabric made from it, Camlet.

Bārang—بارنگ—the seed of a PLANTAGO employed in medicine.

Bārang-bōïa — بارنگ بویا — [the scented *barang*]. The seed of an ARTEMISIA, used as a drug.

BARBERRY—BERBERIS VULGARIS.

Barg—برگ—a leaf.

Barg-a-bana—[the leaves of the tree]. The leaves of PISTACIA TEREBINTHUS, var. MUTICA.

Barg-a-sumāghk—[the leaves of the Sumach]. The leaves of RHUS CORIARIA.

BARILLA—*khār, ishkhār*.

The Alkali of the country, a very impure carbonate of soda and potash, manufactured by burning various salsolacious shrubs — SALSOLA FŒTIDA, SALSOLA ARBUSCULA, SUÆDA FRUTICOSA, HALOXYLON AMMODENDRON, and several species of ANABASIS, besides others; but ANABASIS ERIOPODA is considered the best for the purpose. The substance thus

obtained is a saleable article in all villages and towns where it is locally expended, and as far as I could hear there is no export trade in it. It is employed in the manufacture of soap and glass, in the preparation of skins during the process of tanning in the removal of the hair, and in washing.

BARK—*post, posh.*

Bark—برق—Lightning.

BARLEY—*jao, jow,* HORDEUM species.

BARLEY harsh—*jao-tursh,* HORDEUM VULGARE.

BARLEY huskless—*jao-makai,* HORDEUM HEXASTICHUM, var.

BARLEY pickles—*jao-dana.*

BARLEY sweet—*jao-shīrīn,* HORDEUM HEXASTICHUM.

BARLEY of the desert—*jao-dashtī,* HORDEUM ITHABURENSE.

Bārshonk—Bamboo-grass, PENNISETUM DICHOTOMUM.

Bārtang—بارتنگ—the seeds of several species of PLANTAGO are employed as a drug under this name.

Bārud—بارود—Gunpowder.

Bārzat, barzad—بارزد—*bīrzand,* Galbanum, the gum-resin of FERULA GALBANIFLUA.

BASKET—*sabad, sapad, sabat, kōar,* and *kōara.*

The coarsest forms of basket-work, such as are employed in the walls of houses, the construction of roofs, the building of enclosures for cattle, and the formation of breakwaters to dam up the flow of water, are usually constructed of the branches of the willow, poplar, and tamarisk; the finer kinds of basket-work of the reeds ARUNDO and PHRAGMITES, and by far the best for quality and fineness from the annual shoots of the Judas tree, CERCIS SILIQUASTRUM. Not frequently are to be seen baskets made from the leaves of the bulrush, TYPHA species.

BAT—*shapara.* A small bat, a butterfly, or moth—*shabparak, shaprak, shauprak.*

Bata—Punjabi for PERIPLOCA APHYLLA.

Baz—بز—*bōz*—بوز—*buz, burz, bād*, the goat in general, or the female goat in particular.

Baz-anjīr—[the goat's fig]. The Castor-oil plant, RICINUS COMMUNIS.

Bazbāz—بزباز—Mace, the aril of the Nutmeg, MYRISTICA FRAGRANS.

BDELLIUM—a gum-resin, yielded by BALSAMODENDRON species.

Be, or *bī*—بي—without.

Be-ābān—بيابان—[without water], a desert.

BEAN—the Field-bean, VICIA FABA; the French-bean, PHASEOLUS VULGARIS.

Bed—بيد—a willow, SALIX species.

Bedal—an indigenous SALIX.

Bed-anjīr—[Willow-fig]. The Castor-oil plant, RICINUS COMMUNIS.

Bed-i-mushk—[Musk-willow], SALIX CAPREA?

Bed-i-sīa—[Black-willow], SALIX ALBA.

Bed-i-surkh—[Red willow], SALIX SONGARICA.

Beda—the hay of the Medick clover, Lucerne, MEDICAGO SATIVA.

Bedām—the Almond, PRUNUS AMYGDALUS.

BEE. Any bee or wasp is called *zambur*.

Taking the country over which I traversed as a whole, there were no honey bees, either in a natural state or domesticated. The only hive I came across was in the remains of an old tower at Karez Ilias, where they were in the act of swarming. Bees are said to be common in the woods at Sarakt in the Koh-bāba range, and also in Kohistan. At Herat they are said to be domesticated. The natives say that the tree in which they usually hive is the Honeysuckle, LONICERA NUMMULARIFOLIA, which is generally found hollow. A Bumble, or Humble bee, with a very long proboscis, was common in the Badghis, and a very small species, ANTHOPHORA ATROALBA (?),* was frequently found in an unconscious condition in the sheathing stipules of the Asafœtida plant.

* "Zoology of the Afghan Delimitation Commission," *Transactions of the Linnean Society of London*, vol. v. part 3, 1889.

BEET—the plant that yields Beet-root, BETA VULGARIS.

BEKH—بیخ—the root of any shrub; technically applied to the root-stocks of ACANTHOPHYLLUM MACRODON and GYPSOPHILA PANICULATA, their roots are "the root."

Bekh-i-gao-gosh—[the root of the cow's ear]. The underground creeping stem of APOCYNUM VENETUM.

Bekh-i-gul-i-abās—[the root of the flower *abās*]. The roots of MIRABILIS JALAPA.

Bekh-mahk [the root, of the root] and *bekh-sus*—[the root of the root]. The root-stock of GLYCYRRHIZA GLABRA.

Bekh-i-zīr-balak—[the root of the (thorn) under the leaf]. The wood, and root-stocks of the Barberry, BERBERIS VULGARIS.

BELERIC MYROBALANS, the fruit of TERMINALIA BELERICA.

Benincasia cerifera, *Savi.* CUCURBITACEÆ.

Gourd, *sabcha,* cultivated freely in gardens for its gourd, which is much used as a vegetable.

Beranj—berinj—برنج—Rice, the grain of the plant ORYZA SATIVA.

Berberis vulgaris, *Linn.* BERBERIDEÆ.

The Barberry, *jīr, jīr-khār, zer-khār, zīr, zīr-bār, zīr-balak, zīr-khār,* the fruit *zīrishk, sīrishk.* A very common shrub, growing at an altitude of 2000 feet and upwards, from which is largely collected the fruit; this is consumed locally, as well as being exported in some quantity to India, where it is highly appreciated by the natives as a condiment. Usually the fruit contains no seeds; it is then much more oval, longer, and of a much lighter colour than that which has seeds. On reaching the Punjab the fruit, or preserve, is called *zīrishk-tursh,* to distinguish it in the trade from small, dried, black grapes; the latter are our European Currants, or Corinths. From the root-stocks and wood of the BERBERIS

is obtained an extract called *ībrān;* this is a yellow dye, which is also employed in medicine as a local application to inflamed eyes.

BERRY—*chām, dāna, hab.*

Beta vulgaris, *Linn.* CHENOPODIACEÆ.

Beet. The plant, and Beet-root, *chuk-andar, lablabu.* The leaves are employed whilst still young as a pot herb, but the plant is grown for its root, of which there are the two varieties, red and white. The ordinary beet-root of Afghanistan and Persia is larger and finer in quality than that usually met with in markets in England. The Afghans especially are very fond of this vegetable.

BEVERAGES—

The usual beverage of the Persians is tea, a commodity procurable in the smallest shop, and obtainable in a prepared state by the traveller at almost any house; by the Afghans it is said not to be nearly so much used as it is by the Persians. Milk made sour by the addition of oxygal is the usual offering of a household, especially amongst the nomads, where that article is plentiful, on the arrival of a friend or stranger at the house, accompanied with some bread. At certain seasons, or when milk cannot be procured, an infusion of mulberries, or vinegar to which has been added water and sugar, is offered to the guest in lieu of milk. Wine and spirits, except in the houses of the wealthy, are drunk in private, and not ordinarily as a beverage.

Bhāng—بهانگ—Indian-hemp, CANNABIS SATIVA.

Bhi—بۍ—*bhī*—بهي—the Quince, PYRUS CYDONIA.

Bhī-dāna—بهي دانه—Quince seeds, the seeds of PYRUS CYDONIA.

Bhusa—بهوسا—the Indian term for the crushed straw of various crops, usually applied to that of wheat and barley; its Persian equivalent is *ka, kā.*

Bī, be—بې—without.

Biborate of Soda.

Borax, *tanakār, tanakāl, tunakār, tinkāl, tinkār, tingār;* crystalline Borax, *kalmī.* Is imported through Persia, to be employed chiefly by iron and tin smiths; a little is used by goldsmiths.

Bī-dāna—بیدانه—seedless, without seeds, applied to special kinds of raisins, pomegranates, and other fruits, when seedless.

Bīl—بیل—a shovel-like spade, with a long handle of willow wood.

Bīrīje—the Galbanum plant, FERULA GALBANIFLUA.

Bīrzad—بیرزد—*bīrzand, bīrzat.* The Galbanum plant, FERULA GALBANIFLUA.

BLACK—*sīa, shām, shōm, khul.*

BLACK PEPPER—the fruit of PIPER NIGRUM.

Bōā—بوا—Arabic for the Nutmeg, the kernel of the fruit of MYRISTICA FRAGRANS.

Bōī—بوي—odour, fragrance.

Bōīa—بویا—odoriferous, fragrant.

Bōī-kohī—بوي کوهي—or *buī-kuhī*—[the scent of the hills], Bdellium, the gum-resin of BALSAMODENDRON species.

Bōl—بول—Myrrh, the gum-resin of BALSAMODENDRON MYRRHA.

BORAGINACEOUS. The root bark of a BORAGINACEOUS shrub, employed in medicine, *arī-lang.*

BORAX, BIBORATE of SODA.

Boswellia, *species.* BURSERACEÆ.

Yields the gum-resin Frankincense or Olibanum—*alk, alak, ālk, ālak, īlk, alk-ul-labān, alk-undaru, alk-kundaru, alk-kundar, kundur, ganda-firoza.* Is imported into Meshad from the south and west, and passed on through Herat and Cabul to India in very small quantities; it is an extremely rare and scarce product in these parts. Is considered a valuable resin-medecine for stopping bleeding.

BOTTLE-GOURD—LAGENARIA VULGARIS.

Bow—*kamān ;* bowed, bent—*kamānī.*

Boxes—for the exportation of fresh grapes, apples, and pears are usually made of the wood of Populus nigra, and Salix species.

Box-wood—Buxus sempervirens.

Bōz, buz—بوز—*baz*—بز—*bād, burz.* Applied to goats generally, or to the female goat in particular.

Bōz-dān—[the goat's house, or pen], the name of a locality.

Bōz-ganj—بز گنج—*boz-ghanj*—بز غنج—[the goat's store], a term applied to the galls of Pistacia vera.

Bōz-i-kohī—[the hill goat], the female Ibex.

Bōz-i-āhu—[the female Gazelle].

Bramble—Rubus species.

Branch—*shāk, shākh, shakh, shāgh.*

Brassica campestris, *Linn.*; subspecies **Napus,** *Linn.* Cruciferæ.

Rape, Colza, *shersham, sarsham, sarshaf;* Hind., *sarson.* Only of late years has this been cultivated round Herat; it is common enough in the vicinity of Kandahar. It is grown for its seed, from which is obtained the oil, *roghan-i-shersham,* chiefly employed for lighting with, but also as a food oil.

Brassica campestris, *Linn.*; subspecies **Rapa,** *Linn.* Cruciferæ.

The Turnip, *shalgham,* a common vegetable in all gardens, some varieties are excellent. This is one of the few plants that may be said to yield two crops during the year, the first sowing in early summer yields seed, which seed is sown in autumn, and during winter yields turnips.

Brassica oleracea, *Linn.* Cruciferæ.

The cultivated plant, yielding the varieties of cabbage, *karam,* these are cultivated in all gardens. The Afghans, however, I think use cabbages much more freely than the

Persians. I do not remember, nor have I any note, that I had seen the cauliflower.

BREAD—*nān*—

Is usually made with ferment, and hence differs from the bread of the peasant in India, which is unleavened. The nomads and camel men often bake unleavened bread by rolling the dough round hot stones, and covering the whole with ashes; this form of bread is called *kāk.* Flour made from the dried fruit of the indigenous pear, PYRUS species, of the CELTIS, and Mulberry is generally employed in the manufacture of bread, in the localities where these fruits are common.

I regret that I made no inquiry into what the leaven or ferment was with which the Persians and Afghans raise their bread.

BRICKS—*khesht, khisht.*

Bricks in these countries may be the natural production of the soil, or made of clay and dried in the sun, or the latter subsequently kiln burnt.

One has only to see the effects of the heat of the sun's rays on a clay plain that has lately been inundated with water, to recognise how such soil "produceth bricks;" for very temporary huts these act well enough.

BRINJAL—SOLANUM MELONGENA.

Buhman, bahman—بهمن—a medicine imported into India from Cabul, CENTAUREA BEHEN; intelligent, acute, adroit.

BULB—*gōl, golī, gul, gulī.*

BULRUSH—TYPHA ANGUSTATA.

Burz—a female goat, applied to the female of the Ibex and Gazelle.

BUTTER—*maska.*

The ordinary method of making butter amongst the nomads is by putting freshly warmed milk into a leathern skin, adding to it some sour butter milk, a little water, and then hanging the skin on a tripod over a light fire just hot enough to prevent the warmed milk from losing its temper-

ature; the milk is now churned by swinging the skin backwards and forwards by pulling on a piece of string.

The butter is here usually called *maska*, the fresh butter milk *dogh*. The butter to enable it to keep and allow of exportation is clarified; it is then called *roghan-i-zard*, or the Hindustani term *ghī* may be employed by the traders. This clarified butter is one of the great export and trading commodities of this country to the towns of Persia, Afghanistan, and India.

BUTTER-MILK—fresh *dogh*, (Hind.) *lasī*; made sour *māst*, *māst*; the dried curd of butter milk *karūt*, *māstāwa*, to which our old English term Oxygal corresponds.

BUTTERFLY—*shaprak*.

Buxus sempervirens, *Linn.* EUPHORBIACEÆ.

The Box-wood, or Box-tree, *shamshād*. This tree or shrub I did not meet with, nor is it known to be found over any part of the country which I traversed, although it is by no means a rare shrub in certain districts of Persia, or in some parts of Afghanistan. I found it cultivated at Meshad. Its wood is valued chiefly for making combs. The Tortoise takes its name, *shamshātu*, from it.

Buz, *bōz*—بوز—*burz*, *baz*, *bād*—Goats generally, or the female goat in particular.

Buz—for *puz*—a snout.

CABBAGE—BRASSICA OLERACEA.

Caccinia glauca, *Savi.* BORAGINEÆ.

A common herb in the Badghis and in the Hari-rud Valley, called *gāo-zabān*. It has a large fleshy root-stock, which is eaten in a raw state, and the leaves are used as a pot herb. The corollas, *gul-i-gāo-zabān*, are employed in local medicine, and exported.

Cæsalpinia, *species.* LEGUMINOSÆ.

The seeds of C. BONDUCELLA, and probably also of C. BONDUC; these are called *khāīa-iblīs*, and in Hindustani *kat-*

karounja. In the shops of the vendors of small wares I found these seeds set in metal, and sold to be worn as a charm against the evil eye. These are largely imported into the country from the south.

Calligonum comosum, *L'Hérit.* POLYGONACEÆ.

The glass-wort tree, *pog, phog.* A common shrub in Baluchistan, valuable for its fodder, which is much eaten by camels, sheep, and goats.

Calligonum, *species.* POLYGONACEÆ.

Herbarium specimen No. 1104, collected during May and July 1885. Called *bandak* and *bandukai,* from the numerous corky joints it has on its stem and branches.

CAMEL—*shuthar, shutar; uch* (Baluchi).

The chief means of transport for the Commission from Quetta to Bala-morghab were camels, varying in form from the thin racer-like, rapid walking animal, to the great coarse, thick set, weight carrier; with an occasional Bactrian, the Turkistan double-humped animal,—all vicious lazy brutes; but certainly they received neither sympathy, kind treatment, nor good food to aid in improving their tempers. Owing to the great rapidity of our marches, our transport animals had to be fed on barley and crushed straw, as there was no time to permit of them being allowed to graze, except when we made halts. Had they been permitted to graze, they would have found abundance and varied fodder along the whole of our route, consisting of shrubs of PROSOPIS, TAMARIX, CALLIGONUM, HALOXYLON, ALHAGI, POPULUS, SALSOLA, and ANABASIS. In fact our route lay through a country extremely well adapted for camels, both as regards conditions of country and its capability for supplying fodder. The nomad tribes possess large numbers of camels, which are chiefly employed in the transport of their tents and households, as well as in the conveyance of the merchandise of the country. The hair of these animals is collected at certain seasons of the year when it is falling off and made into a fine valuable camlet, of which much is exported to the various countries surrounding, the finest cloth being eagerly sought after by the better classes in Persia.

CAMEL-THORN—ALHAGI CAMELORUM.

CAMEL-TURNIPS, the root-stocks of CRAMBE CORDIFOLIA.

CAMLET—*barak*—

Is an excellent warm soft cloth. The finest qualities are of the natural colour of the camel's hair; the ordinary cloth, to make it appear all of one colour, is dyed with walnut bark.

Camellia theifera, *Griff.* TERNSTRŒMIACEÆ.
(Thea chinensis, *Linn.*)

The Tea plant. Tea, *chā, chāe.* Tea is imported in immense quantities from all directions, even from Bokhara and Russia, of course the largest importation takes place from Southern Persia and India. The Persians are very fond of the beverage, and partake of it at any hour during the day. The introduction of the tea tray is always an excuse for social intercourse. Tea is to be found for sale in the smallest hamlet, and prepared tea, ready for drinking, is offered to the traveller at nearly every bazaar.

CANDLES—*sham.*

Tallow candles, made of mutton fat, are manufactured in each household as required. A kind of candle, *maluk,* is made by removing the covering of Castor-oil seeds, then crushing the kernels along with raw cotton, until the oil is expressed, then rolling the oil-laden cotton into the form required. Of these usually only enough is made to last the day's consumption. These are chiefly used by the women whilst cooking, to enable them to see into their great caldrons and other cooking pots.

Cannabis sativa, *Linn.* URTICACEÆ.

Indian hemp, *bāng, bhāng.* This plant is certainly not indigenous to the part of the country I went over, I only met with it on one occasion in Persia, where it was cultivated in the garden of a Hindoo. It is, however, well known to the natives as being cultivated in Turkistan for its resinous exudation *chars,* its dried leaves *bhāng,* seeds *tukhm-i-bhāng,* oil of seeds *roghan-i-chars,* and its intoxicant oil *majun.* An informant who had lived a good deal in Turkistan, said that Indian hemp was a field crop, sown annually; the shrub when in flower was

cut over close to the roots, and hung up in a room with the root end of the stems upwards ; under the hanging shrubs on the floor of the room was laid a sheet. The plants on drying were shaken over the sheet, on shaking them a dust, *gard*, fell upon the sheet; this is collected and sold as *chars*. The dried leaves crushed into a powder is *bhāng*. The oil of the seeds is employed in burning as a lighting oil. The resinous exudation and the crushed dried leaves are employed as intoxicants, scarcely ever as medicines; the prepared oil *majun* is a very violent intoxicant, and most unsafe to employ. The stems are subsequently placed in water and then left to steep for several days, when by beating is obtained a fibre, from which are made excellent ropes.

Capparis spinosa, *Linn.* CAPPARIDEÆ.

The Caper, *kawar, kawarz, kawarza, kawark, kāwarg, kāwargīā, kāhwarg, kāhwan, kowwarg.* A common shrub from Quetta to Bala-morghab and Meshad. It is here a very much larger shrub than I ever saw it in the Punjab, and its habit is very different; it grows forming great bushes in the open country, fully five feet in height, and spreading from the centre with great trailing branches, like a huge overgrown bramble. In the Punjab I only collected it as a pendant shrub, growing from the crevices of rocks, in conglomerate formations. The flower buds all through Persia are collected for household use to be made into pickles. Its leaves give excellent fodder, and are collected in quantity for this purpose. *Kawar* is the Caper plant, or it means a place deserted by its inhabitants, desolation, exactly like the old ruins on the Helmand where we saw this shrub growing in the greatest luxuriance and profusion ; the other terms mean the fodder plant, the fodder leaf. The fruit, which is large, is eaten and relished by the natives.

Capsicum, *species.* SOLANACEÆ.

The Capsicum, or Red pepper plant, in all probabilities CAPSICUM ANNUUM, *Linn.*, and CAPSICUM FRUTESCENS, *Linn.* Much cultivated in gardens for the fruit, *march-i-surkh, pīlpīl, fīlfīl ;* by the Turkomans called *karan-pul, kalam-pur, kalanfur,* which is largely employed as a condiment; at

Panjdeh a variety is grown yielding a fine fruit, which is greatly exported.

CARDAMOMS—the fruit of ELETTARIA CARDAMOMUM.
CARDOON—CYNARA CARDUNCULUS.

Carex physodes, *Bieb.* CYPERACEÆ; and
Carex stenophylla, *Wahlb.* CYPERACEÆ.

These are called *tut,* and where they cover meadows, as at Gulran, are considered excellent fodder and very fattening for horses.

CARROT—the root of DAUCUS CAROTA. The hill-carrot ZOZIMIA ABSINTHIFOLIA.

Carthamus tinctorius, *Linn.* COMPOSITÆ.

Safflower, *kājīra, kājura.* The flowers *gul-i-kājīra.* Is cultivated to some extent as a field crop for the flowers, which are employed as a dye stuff. On the 27th October 1884, between De-kamran and De-doda, I found a plant spread over the country, which seemed to be either an escape or a wild condition of this; but alas, all the plants that I collected at this, the most interesting, stage of our journey were destroyed from having apparently lain in water for some time. The petals are employed in the adulteration of Saffron, CROCUS SATIVUS.

Carum Bulbocastanum, *W. D. J. Koch* (?). UMBELLIFERÆ.

The tubers of this plant, Earth-nuts, *yagī-shāk, jāgī-shāk, jīrī-shāk, jīra-shāk,* are collected to be eaten either raw, or cooked as a vegetable. Another species of CARUM, No. 152, of my collection yields a tuber, called *kors-i-gurba* or *kos-i-gurba,* meaning Cat-nuts. Pigs in searching and digging for these tubers destroy the cultivation terribly.

Carum copticum, *Benth. et Hook.* UMBELLIFERÆ.

The Omum plant, and its seed, *ājwain, jowain, joanī.* A cultivated herb in gardens, grown for its fruit, which is in great request as a condiment and medicine by the natives. *Ājkān* is an indigenous herb that is said to grow in the

jungles of Afghanistan and Balkh, and is said to be this plant, but this requires confirmation.

Cassia, *species.* LEGUMINOSÆ.

The leaves of a species of Cassia, which yields the drug Senna, *sanā, sanā-i-makaī*, probably CASSIA OBOVATA, *Collad.*, are imported in some quantities, brought chiefly by pilgrims from Mecca; this is a common drug amongst the natives, and is one of the articles carried by pilgrims for purposes of exchange and barter.

Castanea vulgaris, *Lamark.* CUPULIFERÆ.

The sweet or Spanish chesnut; cultivated in Persia, also indigenous in Northern Persia, called the Royal-Oak, *shā-balut.*

CASTOR-OIL plant—RICINUS COMMUNIS.

CAT—*gurba; pīshak.*

CAT-NUTS—CARUM species.

CATECHU—the extract obtained from ACACIA CATECHU or ARECA CATECHU.

CATERPILLAR—*kirm;* of the silk-worm, *kirm-pela.*

CATTLE—

The Cattle of the country are Camels, the ordinary single humped as well as the Bactrian, or double humped; Horses, Ponies, Mules, Donkeys, Oxen with or without humps, but the humps are never very large; Sheep, and Goats.

CELERY—APIUM GRAVEOLENS.

Celtis caucasica, *Willd.* URTICACEÆ.

Tāghun, tokhm. A common indigenous tree in the Badghis and Khorasan; in the Hari-rud country cultivated near shrines. The wood is considered valuable for household furniture, but chiefly for the manufacture of spoons and bowls; it makes good fuel. There is a superstitious veneration attached to the tree from its being so frequently cultivated in the vicinity of shrines and holy places; as also to its wood, small pieces of which are hung round the necks of women and children as amulets to protect them from evil

spirits. The fruit is eaten, and made into flour to be mixed with ordinary flour to be made into bread. The colour of the fruit I saw was orange-yellow.

Centaurea Behen, *Linn.* COMPOSITÆ.

Dr G. Watt in his dictionary of the "Economic Products of India," gives this as the plant from which is obtained the root *bahman*, or *buhman safed*, the white *bahman* root, and that the plant is a native of the Euphrates valley; Boissier gives Bunge as his authority for the plant, as also from the hills of Khorasan.

Centaurea moschata, *Linn.* COMPOSITÆ.

Maia-mesh. The base leaves eaten raw or employed as a pot-herb.

Cercis Siliquastrum, *Linn.* LEGUMINOSÆ.

Judas tree—*arghawan, arghamon.* The wands or annual shoots of this tree shrub are of a deep red-black colour, very elastic and strong, hence in the vicinity of Meshad, where it abounds, they are employed in the manufacture of all sorts of basket-work, ladles, sieves, and strainers. Cattle do not seem to feed on the foliage.

CEREALS.

Wheat and barley are the chief cereals cultivated throughout this region. The Herat district has long been celebrated for its grain-producing capabilities, and hence is generally alluded to as the granary of this part of Asia. I had no means of obtaining exact information concerning the yield. It was, however, generally stated that wheat was raised in sufficiency to admit of a very large export, in addition to any local consumption; but that barley was chiefly raised for local use. As far as I was able to judge, the quality of these grains did not come up to the same grown in the Punjab, and on the whole appeared poor. The huskless variety of Barley is occasionally cultivated near Bala-morghab and Maimanna, obtaining its local name from the assumption that it originally came from Mecca. The other cereals in the attached list are comparatively sparingly grown,—Rice I saw only once, and that was in Khorasan, it is said to be grown in quantity

at Panjdeh, and that most of the rice consumed in Herat and Meshad is imported from that district, or from the east of Herat. Maize, with the greater Millet SORGHUM, are cultivated on a large scale near Bala-morghab and in the Turkoman country generally; whereas in the Hari-rud Valley and Khorasan I only saw these growing as scattered plants through fields of other crops, as of Melons and Tobacco. The natives speak of Maize and the greater Millet under the common name *jaohrī*, but if asked which they mean, they identify the Maize as "the edible," and the Millet as "that from Turkistan." There is said to be a smaller variety of the latter with large grains; this I never saw. The Millet, PANICUM MILIACEUM, is commonly grown and employed to a large extent as food. Of PENNISETUM SPICATUM I only saw a few plants once in Khorasan.

WHEAT—TRITICUM VULGARE.
BARLEY—HORDEUM HEXASTICHUM, HORDEUM VULGARE.
MAIZE—ZEA MAYS.
GREATER MILLET—SORGHUM VULGARE.
SPIKED MILLET—PENNISETUM SPICATUM.
COMMON MILLET—PANICUM MILIACEUM.
ITALIAN MILLET—PENNISETUM ITALICUM.
RICE—ORYZA SATIVA.

Cha—چه—this syllable in Persian added to words forms the diminutive—as *alu*, a plum; *alucha*, a small plum: *amrud*, a pear; *amrucha*, a small pear.

Chā—چا—*Chāe*—چاي—Tea, the prepared leaves of CAMELLIA THEIFERA.

Chā—چاه—a well, or shaft where water is to be found.

Chāb—a rush, JUNCUS MARITIMUS.

Chaghān—چغان—a cotton cleaner.

Chaka—چکه—small, minute.

Chakh-māk—چخماق—a flint.

Chakh-māk-dāshe—Turki for a flint.

Chām—چام—a grain, a berry, a seed.

Chaman—چمن—a garden, an orchard, a green place.

Chaman-i-bed—[a garden of willows]. The name of a locality.

Chambar—چمبر—*chanbar*—چنبر—a circle, a hoop.

Chambāra—a loop of wood, employed as a pulley.

Chana—چنه—*chanā*—چنا—a Hindustani term for the pulse of CICER ARIETINUM.

Chanar—چنار—*chināra, chunār*—the oriental plane, PLATANUS ORIENTALIS.

Chār—چار—four.

Charā—چرا—a pasture, meadow, grazing; why, wherefore.

Charas, chars—چرس—the resinous dust collected from CANNABIS SATIVA.

CHARCOAL—*jughāl, shughāl, zoghal, zughāl, zugāl, zagāl.*

The charcoal in ordinary use is that made from the woods of PRUNUS EBURNEA and P. BRAHUICA; the best for the use of the goldsmith and blacksmith is made from the wood of JUNIPERUS EXCELSA. For the manufacture of gunpowder the charcoal is made from willow wood, the wood of several species of SALIX, or from the shell of the Cotton-pod.

Charīsh—چریش—*chirīsh, chīresh*—glue, viscous, clammy.

Charīsh-charm—[skin-glue], *charīsh-shōm*—[black-glue], glue prepared from animal refuse.

Charkh—چرخ—circular motion, a wheel, a pulley, a reel, a cart.

Charkha—چرخه—a wheel of any kind, the name applied to MICRORHYNCHUS SPINOSUS.

Charkhī—چرخي—a spinning wheel.

Charkho, chīrkho—the shrub AGRIOPHYLLUM LATIFOLIUM.

Charm—چرم—leather, the skin of an animal.

Char-maghz—چارمغز—[four-brains]. The fruit of JUGLANS REGIA, the Walnut.

Chars, charas—the resinous exudation collected from CANNABIS SATIVA.

Chashma—چشمه—a spring of water, a fountain.

CHEESE—*panīr.*

This I was informed was made in these regions, thus: to make cheese add *panīr-māīa* (rennet), which is a portion of the stomach of a lamb or kid, to sweet milk, then collect the curds by pressure in a cloth, the compressed curd is cheese. When the stomach of a kid or lamb cannot be got, then the juice of a EUPHORBIA is employed in lieu of it, but this gives the cheese a bitter taste. Cheese is only used by the wealthy, it is quite unknown as a food to the poorer Persians.

CHEMICALS, or chemically prepared products.

Barilla, Glass, Gunpowder, Lime, Pitch or Tar, Plaster of Paris, Sal-ammoniac, Saltpetre, Soap.

CHERRY—the fruit of PRUNUS CERASUS.

CHESNUT—CASTANEA VULGARIS.

CHICORY—CICHORIUM INTYBUS.

Chigak—chogak—PROSOPIS STEPHANIANA.

Chik—چق—a curtain made of reeds to give privacy, or exclude glare and flies.

Chīl—چل—*chihal*—چهل—forty.

Chīl for *chīr*, a pine tree.

Chil-ghoza—چلغوزه—[Pine-nuts]. The seeds, or nuts, of PINUS GERARDIANA.

Chilim—چلم—a pipe for smoking with.

Chilimī—چلمي—the bottle gourd, LAGENARIA VULGARIS; so named from its being usually employed to make that portion of the *huka* that holds the water.

Chīn—چين—China.

CHINA-ROOT—the root of SMILAX CHINA.

CHINESE—*chīnī.*

Chīnī—چيني—Chinese; applied to a sugar candy; is the Punjab term for PANICUM MILIACEUM.

Chīr—چير—*chīl*, Hindustanī. The name for the tree PINUS LONGIFOLIA to the east of the Indus, and for PINUS GERARDIANA to the west of the Indus.

Chirīsh, charīsh—چريش—glue.

Chirīsh-shom—[black glue], animal glue.

Chish-khām—a pea cultivated in fields at Meshad, PISUM species.

Chloride of Ammonium, Sal-ammoniac.

Naoshādar. An import into the country, the finest is said to come from Bokhara. Employed chiefly by tinsmiths and gunsmiths.

Chloride of Sodium, Common **Salt.**

Namak, namik, nemak; Turkomani, *thuz.* Herat seems to be the place to which all the salt in the trade gravitates, and from this it is exported to the surrounding countries. From Panjdeh and the great saline plains in the vicinity, called Nemak-sar, is obtained a white salt. At Cha-fil, where some new shafts have been lately sunk, some 40 miles from Do-cha-i-ibrahim-khan, is obtained a very coarse brown, almost black salt. Quarries of rock-salt are said to exist in the hills of Malik-dan, near where we encamped at Galicha on the 12th October 1884. These were worked by Afghans, and the produce is said to be a kind of black salt. There is, however, a red rock-salt for sale in Herat, the same as our Punjab rock-salt, no one could tell me where it came from, it may be entirely an imported article from India. Meshad obtains all its salt from Herat, but European prepared fine salt is to be found for sale in the bazaars.

Chob—چوب—*chub, chu*—a piece of wood, a stick, the plant, wooden.

Chobak—چوبک—[a small stick] employed in separating cotton from the pods.

Chob-i-chīnī—[China stick]. The root of SMILAX CHINA.

Chob-i-dast—[stick for the hand]. A staff or stick to be carried in the hand.

Chob-i-ghoza—[the cotton plant], GOSSYPIUM HERBACEUM.

Chukandar—چقندر—Beet, BETA VULGARIS.

Chukrī—چکری—the edible, indigenous Rhubarb, RHEUM RIBES.

CHURN—

The churn of this country, and such as all the nomads use, is the prepared skin of a goat; *mashk.*

Cicer arietinum, *Linn.* LEGUMINOSÆ.

Anglo-Indian, *gram; nakhud, chana.* This I saw cultivated at an altitude above 4000 feet. The roasted pulse, mixed with sugar and butter, is in common use by travellers, as a convenient food on their journeys, called *kulcha.*

Cichorium Endivia, *Linn.* COMPOSITÆ.

The Endive—*kasnī, kāsnī, kāshnī, kashnīj, kashnīz, kishnīj*—raised annually by seed in gardens; the herb is used as a vegetable, and the seeds employed as a cooling medicine.

Cichorium Intybus, *Linn.* COMPOSITÆ.

"This is the plant that is cultivated in Europe for fodder, and for its roots, Chicory, to mix with Coffee." This indigenous, perennial plant, goes also under the same names as are given to the Endive, the natives do not distinguish between them. It is a common weed over all well-cultivated land, in the vicinity of water-courses, and wherever there is damp, clay soil.

Cinnamomum Cassia, *Blum.?* LAURINEÆ.

A Cinnamon bark, *dār-chīnī, dāl-chīnī,* is imported to be employed as a medicine, and is said chiefly to come from Bokhara. This may still be the case, but no doubt a good deal of a coarse Cinnamon is imported from India.

Citrullus Colocynthis, *Schrad.* CUCURBITACEÆ.

The Colocynth, *khar-khushta, talkhak,* in the desert country of Baluchistan, and on the high lands of the Helmand, this plant was in profusion; the fruit is employed as a medicine for horses.

Citrullus vulgaris, *Schrad.* CUCURBITACEÆ.

The water-melon, *hinduānī,* was seen cultivated as a field crop over the whole country traversed; for two months in the year the water-melon may be looked upon, with a little

bread, as the food and drink of the people. The fields of the water-melon are a great attraction to the wild pig, which do much injury to the crop unless the fields are well watched. Whether it is owing to the climate, or the soil, I cannot say, but the melon in flavour, and sweetness is much superior to any that I ever met with in the Punjab. The natives assert that at Herat a syrup, or molasses, and even a sugar is prepared from the water-melon.

Citrus Aurantium, *Linn.* RUTACEÆ.

The sweet, and a bitter orange, *nauring, auranj, utranj;* are extensively cultivated in the Caspian provinces of Persia, whence the fruit is imported through Meshad into Herat and Afghanistan. The fruit cut in two, with the pulp removed, is dried and sold in the bazaars as *post-i-nauring,* to be employed as a condiment.

Citrus medica, *Linn,* var. **acida.** RUTACEÆ.

The Lime, *līmon.* This fruit in a fresh state is imported from the Caspian provinces of Persia. In a dried condition from both India and the Caspian. It is largely consumed both in the fresh and dried state, and the importation is said to be much larger than that of the sweet-orange.

CLAY—*gil.*

A coloured clay is *gil-i-barang,* red clay *gil-i-surkh;* these are obtained at the localities Barang and Fara in Persia. A red clay employed in the adulteration of Asafœtida is called *tāwa.* The great plains of clay left by deposit from water are called *pat.*

CLOTH—

The commonest coarse cotton country fabric is *karbas* and *kanawez;* made of camel's hair, *barak;* of fine goat's hair, *kurk, kurg,* also *pat, patu;* made of sheep's wool, *patu.* The material of which the black tents are made is coarse goat's hair.

CLOVE—the flower buds of EUGENIA CARYOPHYLLATA.

CLOVER—the clovers cultivated for fodder are

MEDICAGO SATIVA, TRIGONELLA FŒNUM-GRÆCUM, and TRIFOLIUM RESUPINATUM.

COAGULATE—

The substances employed in the coagulation of milk are, milk that has already been coagulated, rennet, and the milky juice of a EUPHORBIA.

COBRA—

Although a Cobra is common in the Badghis, viz., NAIA OXIANA, it goes by the same native name as VIPERA OBTUSA, viz., *shutar-mar*, and not by the Sanscrit and more southern name *phan-dhār;* yet it is curious enough to note that an ARUM and a HELICOPHYLLUM, owing to their prominent spathes, are called *phanār*, no doubt a contraction from *phan-dhār*. Naturalists say that this Cobra does not exhibit a hood; if this is the case it accounts for the name, "the hooded one," not being applied to it.

COCHINEAL—the dye stuff; *karmīz*.

It is imported into these regions from Bokhara and Persia, the finest it is said coming from Bokhara.

COCOON—of the silk-worm, *pela*, *pīla*, *kokh-i-pela*, *gola*, *goza*, *kawa*.

Codonocephalum Peacockianum, *Aitch. et Hemsley.* COMPOSITÆ.

Landār. This shrub, from four to six feet in height, covers great expanses of country with its splendid foliage, which is greedily fed upon by goats and sheep. The tracts of the country covered with this herbage form grand feeding grounds for these animals; the shrub might, I believe, be introduced into this country profitably for feeding sheep.

Colchicum speciosum, *Stev.* LILIACEÆ.

I met with this occasionally throughout the Badghis, Harirud, and Khorasan, but only in fruit. The corms are used to mix with those of MERENDERA PERSICA.

COLOCYNTH—CITRULLUS COLOCYNTHIS.

COLZA—Rape, BRASSICA CAMPESTRIS.

COMB—*shāna.*

The sellers of combs say they are made of Ebony, whereas the buyers consider the wood to be of Mulberry, MORUS ALBA, that has been buried for a time to give it a dark colour. Those I saw were certainly not made from Ebony.

CONDIMENTS—*aduīa-garm.*

Under this head I class other products than probably the exact meaning of either the Persian or English words would allow.

I. LOCALLY PRODUCED.

a. From Indigenous Plants.

The fruit of BERBERIS VULGARIS.
Manna from ALHAGI CAMELORUM.
Manna from COTONEASTER NUMMULARIA.
The fruit of PSAMMOGETON SETIFOLIUM.
Sarcocolla, a manna-like product from ASTRAGALUS SARCOCOLLA.

b. From Cultivated Plants.

Vinegar—from the juice of the grape, VITIS VINIFERA.
Syrup—from grapes.
The oil of the seeds of LUFFA ACUTANGULA and other Cucurbitaceæ.
Cumin seeds, the fruit of CUMINUM CYMINUM.
Anise, the fruit of PIMPINELLA ANISUM.
The fruit of CARUM COPTICUM.
Red-pepper, the fruit of CAPSICUM species.
Sesamum seed, the seed of SESAMUM INDICUM.
Garlic, the bulbs of ALLIUM SATIVUM.

II. IMPORTED FROM THE COUNTRY IN THE VICINITY.

Honey—Salt.

III. IMPORTED FROM A DISTANCE.

The dried fruits, Oranges, and Limes of CITRUS AURANTIUM, var.
Cloves, the flower buds of EUGENIA CARYOPHYLLATA.
Nutmegs, the kernel of MYRISTICA FRAGRANS.

Cinnamon, the bark of CINNAMOMUM species.
Black-pepper, the fruit of PIPER NIGRUM.
Cardamoms, the fruit of ELETTARIA CARDAMOMUM.
Ginger, the rhizomes of ZINGIBER OFFICINALE.
Turmeric, the rhizomes of CURCUMA LONGA.
Saffron, the stigmata of CROCUS SATIVUS.
Sugar—Salt.

IV. CONDIMENTS EXPORTED.

The fruit of BERBERIS VULGARIS, vinegar, the two kinds of Manna, the fruit of PSAMMOGETON SETIFOLIUM, and Sarcocolla.

CONE—

Is called by the same name as the tree PINUS HALEPENSIS, viz., *naoju, nāju;* as it is the only pine tree of these parts, cones are not well known. Owing to their rarity, as well as from some superstitious idea, one is usually kept in the work-bags of the ladies of the nomad tribes.

Conium maculatum, *Linn.* UMBELLIFERÆ.

Hemlock. At Kharobagh I met with plants of this fully seven feet in height.

Convolvulus, *species.* CONVOLVULACEÆ.

The plant *nīla-fār*, the seeds *tukhm-i-gul*, which I believe will prove to be a species of IPOMŒA, is cultivated for its beautiful blue flowers, and of which the seeds are employed in medicine.

COPPER—the metal, *mis;* sulphate of copper, *sang-tutia, nīl-tutia* (Hind.), *zangāl, zangār* (Turkomanī).

The metal in sheets is imported in quantity through Persia and from India, to be forwarded to Turkistan as well as for local industry. Copper dishes, owing to the trouble of conveyance, are not now much imported.

The salt, Sulphate of Copper, comes chiefly from Bokhara.

Cordia Myxa, *Linn.* CORDIACEÆ.

The fruit Sebestens, *sapistan*, are chiefly imported from

Southern Persia, to be employed in medicine, and are forwarded in quantity to Turkistan.

Coriandrum sativum, *Linn.* UMBELLIFERÆ.

The Coriander, *kashnīz,* cultivated in gardens.

CORINTHS, or Currants, a small black grape dried, the fruit of a variety of VITIS VINIFERA.

Cotoneaster nummularia, *Fisch. et Mey.* ROSACEÆ.

Sīa-chob, gab-chīr, gab-shīr, gap-chīr, gapshīr. Is a common shrub on the Sīa-koh and Safed-koh ranges, at an elevation of 3000 feet and upwards. In certain localities it is met with forming gregarious copses, as on the Erdewān pass, where it grows to a size almost permitting of its being considered a tree. Its wood is highly valued next to that of ZIZYPHUS VULGARIS for supplying handles to agricultural implements, for staves, and owing to its great elasticity makes the best loops or pullies, *chambara,* of any wood. It yields in certain seasons, from the surface of its smaller branches, a manna called *shīr-khisht ;* this manna is largely collected both for local use, being much eaten by the people either along with their food in its natural condition, or converted into some form of sweetmeat, as well as for exportation chiefly to Afghanistan proper and India.

COTTON—the fibre of the plant GOSSYPIUM HERBACEUM.

COTTON-GIN—*halaji.*

Cousinia, *species.* COMPOSITÆ.

Herbarium specimen No. 365, May 1, 1885.

Pulush. The leaves of this plant are covered on the under surface with a cottony tomentum; owing to this structure the leaf makes a good tinder.

Crambe cordifolia, *Stev.* CRUCIFERÆ.

The Camel-turnip, *tātrān, tāterān, tetrān, taturān, tatrang.* A very handsome perennial, the annual shoots springing up in numerous clusters from the large underground root-stock. The annual shoots and foliage make splendid forage for all

cattle, and the root-stocks are collected for feeding camels with during winter by the nomads. The low hills round Bala-morghab were honeycombed with pits from which the nomads had collected these great turnip-like roots. They are too fibrous and woody to be eaten by any other cattle than camels, whose massive jaws are alone able to crush such woody diet. The gazelle is very fond of the tender herbage of this plant, and ordinarily hides its young under a dense cluster of its leaves.

Cratægus Oxyacantha, *Linn.* ROSACEÆ.

The Hawthorn, *alaf-khez, alaf-kharez, koha, kohja, kocha, guj-i-kohja, gohja, daluna.* A shrub or small tree, at an altitude of 3000 feet and upwards; common at spring heads and in the low hills, hence the names, alluding to its being a fodder at springs, and as occurring amongst the hillocks. It gives excellent fodder to goats, sheep, and camels. The wood is valuable for the manufacture of spinning wheels and cotton-gins.

CREAM—*kīmāk, kaimāg, sar-shīr, sirshīr, postīgī.*

Crocus sativus, *Linn.* IRIDEÆ.

The Saffron Crocus yields the dye and condiment *zāfrān*, which is imported from Candahar to Herat, as also from Persia. As a condiment it is much consumed by the Persians, they being exceedingly fond of the flavour. It is also employed as a dye. I was informed by a traveller that it was a good medium to carry about one, as a means of making payments in lieu of small sums of money. Good saffron, owing to the difficulty of procuring it, is readily sold in all parts of Persia. In Persia it is greatly adulterated with the flowers of CARTHAMUS.

CROPS—see Cereals, Cultivation, Drugs, Dyes, Fibres, Fodder, Fruits, Oils, Pulse, Scents, Tobacco, Vegetables.

SECOND CROPS are almost unknown; as a rare occurrence the harsh barley, HORDEUM VULGARE, the millet, PANICUM MILIACEUM, and the Lucerne, Medick clover, MEDICAGO SATIVA, may follow a crop of wheat or barley. The chief reason why a second

attempt at a crop is so rare, is the extreme temperature that occurs at the end of July or beginning of August, necessitating a free supply of water, which is then becoming scarce, being required for the other crops—Melons, Cotton, and Tobacco, so that what with the excessive heat and absence of a good supply of water a second crop almost always proves a failure. Natives tell one of second crops of Lucerne, MEDICAGO SATIVA, but this usually is not a true second crop, it is merely second, third, or fourth cuttings from the originally raised roots, the plant throwing up fresh stems after each cutting. A crop of this in a rich, well-watered orchard, where there is abundance of rich soil, and shelter from both excessive heat and cold, will allow of cuttings all through summer and winter. The turnip in one sense yields two crops, in early summer it yields seed which are sown in autumn, the plants of which yield turnips in winter.

Croton Tiglium, *Linn.* EUPHORBIACEÆ.

Croton seeds, *hab-dilmaluk, hab-al-salatīm,* are imported from India to be employed in medicine.

Crozophora tinctoria, *A. Juss.* EUPHORBIACEÆ.

Turnsole, *kap-o-chīst,* so called on the Helmand.

CUCUMBER—CUCUMIS SATIVUS.

Cucumis Melo, *Linn.* CUCURBITACEÆ.

The melon, *khar-buz, khar-buza, khar-buze.* Melons are largely cultivated as a field crop, but not to the same extent as the water-melon. The variety *sardā* keeps well, and is exported to India in great quantity during the winter, where it is much appreciated by both Europeans and natives. Europeans in India and elsewhere have tried to raise from seed the *sardā* melon, this has always proved a failure, the fruit produced being of a very ordinary form, and never having the flavour of the Afghan fruit. The word *sardā* means cold, and subsequently came to mean the last fruits of the season, left hanging on the trees, when the main crop had been collected. The melon collected from the plants that yield the *sardā,* whilst the season is hot and there is still no frost, is, comparatively speaking, an ordinarily good melon, but once

the season is ending and night frosts have set in, and the plants are beginning to be nipped, the gardeners carefully cover the fruit to prevent it from being injured by the frosts, and then collect it when not quite ripe; these fruits ripen very slowly, will keep through the whole winter, and in flavour seem to improve the longer they are kept. It is this treatment, I believe, that constitutes the difference between the ordinary melon and the *sardā*, and why gardeners out of Afghanistan and Persia have not been able to produce the fine-flavoured Peshawur trade article, and which even in the old caravan, now railway, days were carried in perfection to Southern India. It is curious that another melon, an early ripening one, receives a very opposite name, viz., *garma*, and which has come also to mean first fruits—*garma*, meaning heat.

The flesh of the melon, after the rind is removed, is dried, when it is called *kāk;* this is much eaten by the natives cooked along with other food, and is to be seen hanging up for sale in all bazaars. An oil, *roghan-i-tukhm*, is extracted from the seeds, and is looked upon as a delicacy.

Cucumis sativus, *Linn.* CUCURBITACEÆ.

The Cucumber, *khīār, turi* (?), is cultivated in all gardens, the fruit being eaten much raw, as we would an apple; it is a delicious fruit thus eaten on a hot day. The seeds, *hab-i-khīār, tukhm-i-turī* (?), are employed whole in native medicine.

Cucumis trigonus, *Roxb.* (?). CUCURBITACEÆ.

This is supposed by some to be the wild form of CUCUMIS MELO. The fruit is not much larger than a large plum, but has a most delicious aroma when almost ripe. It was in abundance on the low banks of the Helmand. It was eaten raw, and cooked by the camp followers.

Cucurbita Pepo, *DC.* (?). CUCURBITACEÆ.

The Pumpkin, *thambal,* is largely cultivated and much employed as a vegetable.

CULTIVATION—

Taking our lowest altitude in these regions to be 1000

feet above the sea-level, we find that until an altitude at the least of 3000 feet is reached no cultivation of any sort can be carried on successfully without liberal irrigation; this is due to the excessive summer heat for these latitudes, along with the extreme dryness of the climate. Up to 2500 feet, where there is no water, the country is a parched arid waste, except for three or four months during the year, namely, from the middle of March to the middle of July, and then the verdure is only exceptional and dependent upon certain special forms of vegetation. Upon the occurrence of the extreme temperature, accompanied by hot blasts of air, lasting for several days consecutively, even the exceptional vegetation is suddenly swept away. The cereals would also be as suddenly cut off, before they had ripened, were it not for irrigation; and the other crops, cotton, water-melons, tobacco, and garden produce could not possibly live through the extreme dryness, caused by this accession of heat. Orchards and garden crops require, in addition to irrigation, protection by means of high walls from the blasts of the fiery hot wind, which last for several days at a time, and which utterly destroy the chances of any tree life in the open country. So that wherever there are fine orchards, these are always found to be surrounded by high walls, which are usually carried up to the height that the trees enclosed will ordinarily grow to. The cold winds of winter, when the temperature falls frequently below zero Fahrenheit, are said not to do nearly so much injury to the trees as the hot blasts of summer.

From Herat, north and westwards in the Hari-rud Valley, the whole cultivation is carried on by irrigation, the water being led from the Hari-rud itself. These irrigation works are in poor repair, and much land is lying fallow which, were water forthcoming, could be placed under cultivation. Between Meshad, Turbat-i-haidri, and the Hari-rud the water for cultivation is chiefly obtained by tapping springs close to the base of the hills, and conducting the water by underground channels to the localities where the irrigation is required. This method of obtaining water is an extremely laborious one, and owing to the spring-head running dry, from the water above it having altered its course or other causes, much destruction of cultivated lands and ruination of villages result. Around all villages may be noticed the ruins

of many irrigation works, the new sources of supply, pointing to the energy of the inhabitants.

In the Badghis, until one reaches as far east as Khushk, and north to Kalla-i-maur, there is no cultivation, nor habitations, but traces of past irrigation works, leading to what had been large areas of cultivation, were noticed during all our marches.

The natives enrich the soil with all the manure they can collect from their great flocks, but notwithstanding this enrichment of their fields, the wheat and barley appeared to me to produce a poorer grain than that of the Punjab.

Cuminum Cymanum, *Linn.* UMBELLIFERÆ.

Cumin, *zīra, jīra.* The fruit is employed in medicine and as a condiment, and forms part of the well-known aromatic powder *aduīa-deg.*

Cupressus sempervirens, *Linn.* CONIFERÆ.

The Cypress, *saur, saro, sarun, sarwī, sawu.* A few trees of this occur cultivated in gardens at Herat; I fancy I saw some at Meshad. The only one I have noted in my Journal is a tree to the west of the fort at Sangun.

CUPS—*pīāla, pīāle.*

Earthenware cups are chiefly imported from Bokhara. The larger portion of those I saw had the appearance of having been manufactured in Russia.

Curcuma longa, *Linn.* SCITAMINEÆ.

Turmeric, *zard-choba,* is very largely imported from India as a dye stuff, and for preparing the leather part of the fur robes *postīn;* a little is employed as a condiment.

Curcuma Zedoaria, *Roscoe.* SCITAMINEÆ.

Zedoary, *jidwār, jizwār, kachur, kachul,* is imported in quantity from India, most of it to be passed on to Turkistan. The long tubers are called *nar-kachul,* and the round ones *mada-kachul,* as if they were the product of two different plants, but I have only seen them mixed together, and not sold as two distinct roots. The Turkomans employ these roots as

a rubefacient, to rub their bodies down with after taking a Turkish bath. In this part of the country, in lieu of these, the nodes on the roots of EREMOSTACHYS LABIOSA and another species are collected and sent on to Turkistan. Curcuma roots are employed a little in native medicine, and as a condiment.

CURDLED MILK—

Sweet milk curdled is *kīsht ;* if curdled with rennet, and the curd compressed, this is cheese, *panīr.* Sour milk, or butter milk curdled, is *māst, māst ;* the curd of this compressed is oxygal, *māstāwa, karut.*

CURRANTS, or Corinths, the dried fruit of a variety of the Vine, VITIS VINIFERA.

CUTTLE-BONE, the internal calcareous skeleton of SEPIA species.

Cynanchum acutum, *Linn.* ASCLEPIADEÆ.

Mār-pech. A common climber in the TAMARIX jungles on the Hari-rud. The fruit of this if eaten is considered poisonous.

Cynanchum, *? species.* ASCLEPIADEÆ.

Called by the Afghans *pech-ak,* and by the Baluchis *pīr-wathī.* A tall climber, occurring on the islands and low land on the banks of the Helmand river, covering the trees of the Euphratic Poplar and TAMARIX with its masses of heavy foliage. The foliage makes excellent fodder for camels and goats. The fruit was collected in an unripe green state and eaten by the Baluchis, who call it *shangar.*

Cynara Cardunculus, *Linn.* COMPOSITÆ.

The Cardoon, employed as a vegetable, cultivated in gardens.

Cynara Scolymus, *Linn.* COMPOSITÆ.

The Artichoke. Is a cultivated plant in gardens in Persia. De Candolle, in his "Origin of Cultivated Plants," from Ainslie's *Materia Medica,* gives the Persian name for this

plant as *kunghir;* this name must have originated from the Persian name for the shrub GUNDELIA TOURNEFORTII, viz., *kangar.*

Cynodon Dactylon, *Pers.* GRAMINEÆ.

The *dub* grass of the Punjab. It was certainly by no means a common grass in this country.

CYPRESS—CUPRESSUS SEMPERVIRENS.

Daba—دبه—a large vessel, usually intended for holding oil, clarified butter, &c.

Daba-i-charm—[a vessel (made) of skins], or the intestines of animals.

Daba-i-sarīsh—[a vessel (made) of vegetable glue].

Dāl—دال—Hindustani for the dried split peas of the pulses, or a food prepared from them.

Dala—دله—a Marten, MUSTELA species; or Polecat, PUTORIUS species.

Dāl-chīnī for *dār-chīnī*—CINNAMOMUM CASSIA.

Daluna—the Hawthorn, CRATÆGUS OXYACANTHA.

Dān—دان—a vessel, a house, a place of resort.

Dānā—دانا—learned, wise.

Dāna—دانه—a grain, a berry, the seed of any fruit; technically applied to the entire fruit of the indigenous Pomegranate, or to the small uneatable fruit of the cultivated shrub PUNICA GRANATUM; science, knowledge.

Dāna-chaka—[small berries]. The fruit of LONICERA NUMMULARIFOLIA, the tree Honey-suckle, the fruit of which is much eaten by children.

Dāna-dār—دانه دار—full of seeds, containing grain, or seeds, in contradistinction to *be-dāna,* seedless.

Dāna-hīl—دانه هیل—[Cardamom seeds]. The seeds of ELETTARIA CARDAMOMUM.

Dānak—دانک—a small grain, or seed.

Dar—در—in, into, within, on, of, because.

Dār—دار—a tree, a beam, wood; in composition, like to, possessing the properties of.

Dār-chīnī—دارچيني—or *dāl-chīnī*—[Chinese stick]. Cinnamon, the bark of CINNAMOMUM CASSIA

Darakht—درخت—a tree.

Darakht-i-stān—درختستان—[a place of trees], a forest.

Darīā—دريا—a sea, river, waters.

DARNEL-GRASS—LOLIUM TEMULENTUM.

Dāru—دارو—a medicine, a remedy.

Dāru-farosh—داروفروش—[a vendor of medicines], a druggist.

Dāru-garm—داروگرم—or *dārue-garm*—داروي گرم—black-pepper, PIPER NIGRUM; or spices in general.

Dāru, dārim, durunī—in the Punjab, the indigenous shrub of PUNICA GRANATUM, and its fruit.

Dasht—دشت—a plain, a desert.

Dashtī—دشتي—wild, indigenous, uncultivated.

Dast—دست—the hand.

Dasta—دسته—the handle, as of an axe, spade, or whip.

DATE-PALM—the tree PHŒNIX DACTYLIFERA, *māch*; the fruit, dates, *khurmā*.

Datura Stramonium, *Linn.* SOLANACEÆ.

The Thorn-apple, *kachola; dhatura, datura* (Hind.), the fruit *goz-i-kanā*. This plant only occurred, I believe, as an introduced weed; the natives knew it to be poisonous, but applied to it the usual name for the seed of STRYCHNOS, *kachola*, or the Hindustani term *dhatura;* upon closer inquiry I found some druggists gave the Persian name for the fruit. At page 16, in the Botany of the Afghan Delimitation Commission, I have by error alluded to *Datura alba*.

Daucus Carota, *Linn.* UMBELLIFERÆ.

The Carrot, *zardak; sabzī* (Turkomani). Greatly valued as a vegetable, and much cultivated, to be found in all

gardens. As an escape in fields it is common, but I never met with it here, as I have in the upper parts of the Kuram Valley and Kashmir, where I would certainly consider it an indigenous plant.

Dawā—دوا—(plural *adwīa*—ادویه)—medicine, a remedy.

Deg—دیگ—a large iron pot or mortar.

Delphinium Zalil, *Aitch. et Hemsley.* RANUNCULACEÆ.

Yellow Larkspur, *asbarg, aswarg, isbarg, isbarag, isparak, sparak, sparīg, jalīl, zalīl;* the flowers *gul-i-zalīl, gul-i-jalīl.* A perennial herb, with a thick short woody root-stock, from which several annual shoots spring; these are from one to two feet in height, each usually bearing a terminal spike of exquisite yellow flowers. When the flowers are at their best, the annual shoots bearing the spike of inflorescence is broken off close to the root; these are collected together, and then laid in heaps, usually on the roofs of the houses, to dry. In two or three days they are sufficiently dry, when the twigs are shaken over a sheet; on this all the flowers tumble off, and are now collected, either for local use, or exportation. The petals are of commercial importance, yielding a valuable yellow dye for silk, and are exported for this purpose in large quantities to Persia, Turkistan, Afghanistan, and even to India. The dye is easily obtained by simply boiling the flowers in water; in this decoction the silk is dipped. The dried stems also yield a dye upon being boiled, but this is poor in comparison with that yielded by the flowers. In India the petals are also employed in medicine. The plant has been raised from seed, and has flowered, both in England (at Kew) and in Germany since I collected it. It ought to succeed well in Southern Europe, both in France and Italy, and might prove useful as a dye.

DESERT—*jangal, dasht, be-ābān, maidān.*

Dewāna, dīwāna—دیوانه—imbecile, insane, foolish.

Dhaturā—دهتورا—Hindustani for DATURA species.

DIMINUTIVE—the letter *k*—ک, or the syllable *cha*—چه, added to a word in Persian, gives the diminutive of it.

Diospyros Lotus, *Linn.* EBENACEÆ.

The Afghan name for the tree and its fruit, *ālmlōk.* I did not meet with either the tree or its fruit on this journey, but it is indigenous in the Caspian provinces of Persia.

Diospyros, *species.* EBENACEÆ.

The wood of a species of DIOSPYROS is Ebony, *ābnus.* This is said to be employed in the manufacture of combs, if so, it must be imported.

DISHES—

The ordinary dishes and platters of the agriculturalist and nomads are made of wood, called *tābak* and *kās-i-chobī;* the largest and best are made from Walnut wood, those in ordinary use usually of willow, or CELTIS. A dish in which women keep their prepared cotton for spinning is called *kolak.*

DOCK, DOCKEN—RUMEX species.

DOG—*sag.*

DOG-ROSE—*sag-zahr*—ROSA BEGGERIANA.

DOG-SNAKE—*sag-mār*—a species of lizzard, OPHISAURUS APUS.

Dōgh—دوغ—butter milk.

Dolichos Lubia, *Forsk.* LEGUMINOSÆ.

Yields the Lubia-bean, but the *lobia* or *lubia* of Persia is PHASEOLUS VULGARIS.

Dorema Ammoniacum, *Don.* UMBELLIFERÆ.

This is the plant that yields the gum-resin Ammoniacum, it is called *kandal-kema,* and the gum-resin *kandal* or *ushak.* The plant about the time the fruit is forming is attacked by a boring beetle, the result is that at each spot of injury there exudes a thick, viscid, almost pure white juice; this gradually dries owing to exposure, and by the adherence of numerous adjacent exudations forms into irregular-shaped blocks of all sizes, which frequently surround and enclose the fruit and smaller twigs. Whilst fresh, or if the Ammoniacum has been carefully protected from the light, it is of a greyish opalescent colour, but if exposed to the light

for even a short time, it gradually changes to a light yellow and then orange-brown, and at last cannot be distinguished by an ordinary observer from the gum-resin Galbanum. The nomads collect Ammoniacum in quantity between Bezd and Sher-i-nao—where I saw vast meadows of the plant—for exportation to the sea-coast towns of Persia. It is curious that none of this drug should ever be sent to India *via* Afghanistan.

Dorema glabrum, *Fisch. et Mey.* UMBELLIFERÆ.

Asp-i-kema, kema-i-asp. This plant exudes a gum-resin, of rather a brittle consistency, and of a light ruby colour, which I myself saw in minute granules, but not in quantity to collect, nor did I ever get any of it.

Drab—the grass, ERAGROSTIS CYNOSUROIDES.
DRUGGIST—*dāru-farōsh, atār, khruda-farōsh.*
DRUGS, Medicines—*dāru, dawā, adwīa.*
DRUGS.

I. Indigenous plants employed in medicine, or from which are obtained substances used as drugs.

DELPHINIUM ZALIL. The flowers, *asbarg, aswarg.*

BERBERIS VULGARIS. The Barberry, an extract from the wood and root-stocks, *ībrān.*

RŒMERIA HYBRIDA. The seeds, *shatīra.*

SISYMBRIUM SOPHIA. The seeds, *khāk-shī.*

ALTHÆA HOHENACKERI. The seeds, *tukhm-i-khatmī;* and petals, *gul-i-khatmī;* and ALTHÆA OFFICINALIS.

MALVA SYLVESTRIS. The flowers, *gul-i-khatmī.*

ZYGOPHYLLUM FABAGO. The crushed roots, as a poultice to clean sores, *sīmang.*

PEGANUM HARMALA. The shrub is collected in heaps and burnt upon the presence of an epidemic. The seeds are employed in medicine, *harmal, spand, ispand.*

BALSAMODENDRON MUKUL. The gum-resin, *gugal.*

PISTACIA VERA. The oil from the kernels, *roghan-i-pista;* the gum-resin, *kun-jad, wanjad;* and a turpentine obtained from the gum-resin.

PISTACIA TEREBINTHUS, var. MUTICA. The gum-resin and a turpentine obtained from it, *kunjad, wanjad.*

GLYCYRRHIZA GLABRA. The root-stock, *bekh-mahk;* the extract Liquorice, *mahk, rob-asus.*

PROSOPIS STEPHANIANA. The seeds, *tukhm-i jinjak.*

CITRULLUS COLOCYNTHIS. The pulp of the fruit employed in veterinary surgery, *talkhak.*

TRACHYDIUM LEHMANNI. The roots, *shakākul.*

FERULA FŒTIDA. The gum-resin Asafœtida, *anguza, hīng.*

FERULA GALBANIFLUA. The gum-resin Galbanum, *jāo-shīr, bārzad.*

DOREMA AMMONIACUM. The gum-resin Ammoniacum, *kandal, ushak.*

ARTEMISIA species. The flower heads, *afsantīn.*

ARTEMISIA species. The flower heads, *bārang-bōīa.*

CACCINIA GLAUCA. The corollas, *gul-i-gāo-zabān.*

ANCHUSA ITALICA. The corollas, *gul-i-gāo-zabān.*

BORAGINEÆ. The bark from the roots of a Boraginaceous shrub *ārī-lang.*

SOLANUM NIGRUM. The dried fruit, *tāj-i-rizī.*

SALVIA CERATOPHYLLA. The herb.

ZIZIPHORA TENUIOR. The whole plant, *kākutī.*

EREMOSTACHYS LABIOSA, and other species. The tubers of the roots, *agar-magar.*

LABIATÆ. Herbs of which the genera have not been identified —*badranj-bōīa*, the seeds; *kanoucha*, the seeds; *sātar*, the herb and flower heads; *ustukhudus*, the herb.

PLANTAGO species, *bārtang, bārang.* The seeds of several species.

RHEUM TATARICUM. The fruit and roots-stocks, *rewand-i-dewāna.*

EPHEDRA PACHYCLADA. A decoction of the stems used by the Afghans, *mao, huma.*

MERENDERA PERSICA. The corms, *shambalīt, surinjān.*

Golī-sarnagun. The bulbs of a plant.

Gul-i-nīlī. A brilliant blue flower employed in medicine.

Kawhai. A plant used in medicine.

AGARICUS species, *ghārī-kun.*

Under Condiments—SARCOCOLLA, the Mannas, PSAMMOGETON; *anjadān* or *gulpār, ājkān.*

Under Foods (other)—ORCHIS, ALLIUM, TULIPA.

Minerals obtained in the country, employed in medicine—

Mumīāī. A natural mineral pitch.

Chemically prepared substances employed as medicines—

LIME—*āhak.*

PITCH, or TAR, from the destructive distillation of the dung of sheep and goats, *sīa-roghan.*

II. Cultivated plants employed in medicine, or from which are obtained substances used as drugs.

PAPAVER SOMNIFERUM. Yields Opium, *āfīun, tarīāk.*

ERUCA SATIVA. The oil, *roghan-i-til.*

ALTHÆA LAVATERÆFLORA. The petals, *gul-i-khatmī;* the seeds, *tukhm-i-khaira;* the roots, *resha-khatmī.*

TRIGONELLA FÆNUM-GRÆCUM. The leaves used in poultices, *shamlīd.*

PRUNUS CERASUS, var. The bitter Cherry, the dried fruit employed in surgery, *ālu-bālu.*

LUFFA ACUTANGULA. The seeds, *tukhm-i-turī.*

CUCUMIS SATIVUS. The Cucumber; the seeds, *hab-i-khīār.*

CICHORIUM ENDIVIA. The seeds, *kashnī.*

FRAXINUS species. The seeds, *tukhm-i-banaush.*

IPOMÆA (?) species. The seeds, *tukhm-i-gul.*

RICINUS COMMUNIS. The Castor-oil plant, although Castor-oil as a drug is well known and imported, and CROTON seeds are employed, neither the local oil nor the seeds of the Castor-oil plant are employed in medicine.

JUGLANS REGIA. The Walnut, the oil of the nut, *roghan-i-jauz.*

MIRABILIS JALAPA. The roots, *resha-i-gul*, and seeds, *bekh-i-gul (-i-abās).*

Kār-o-zera. The fruit of a cultivated tree.

Under Condiments—CUMINUM, PIMPINELLA, CARUM.

Under Narcotics, not employed as drugs—CANNABIS.

III. Plants or their products exported to be employed in medicine.

DELPHINIUM ZALIL. The flowers, *asbarg, aswarg.*

BERBERIS VULGARIS. The Barberry, an extract *ībrān.*

PAPAVER SOMNIFERUM. The inspissated juice, Opium, *āfīun, tarīāk.*

RŒMERIA HYBRIDA. The seeds, *shatīra.*

SISYMBRIUM SOPHIA. The seeds, *khāk-shī.*

ALTHÆA HOHENACKERI. The seeds and petals, *tukhm-i-khatmī, gul-i-khatmī.*

ALTHÆA LAVATERÆFLORA. The petals, *gul-i-khatmī;* the seeds, *tukhm-i-khaira;* the roots, *resha-khatmī.*

MALVA SYLVESTRIS. The flowers, *gul-i-khatmī.*

BALSAMODENDRON MUKUL. The gum-resin, *gugal.*

PISTACIA VERA, and PISTACIA TEREBINTHUS, var. MUTICA. The gum-resin, *kunjad, wanjad.*

GLYCYRRHIZA GLABRA. The root-stock, *bekh-mahk;* the extract, *mahk, rob-asus.*

PROSOPIS STEPHANIANA. The seeds, *tukhm-i-jinjak.*

PRUNUS CERASUS, var. The dried fruit, *ālu-bālu.*

TRACHYDIUM LEHMANNI. The roots, *shakākul.*

FERULA FŒTIDA. The gum-resin Asafœtida, *anguza, hīng.*

FERULA GALBANIFLUA. The gum-resin Galbanum, *jāo-shīr, bārzad.*

DOREMA AMMONIACUM. The gum-resin Ammoniacum, *kandal, ushak.*

VALERIANA WALLICHIANA. The root-stocks, *sambal-ultīb, mahk-ak.*

ARTEMISIA species. The flower heads, *afsantīn.*

ARTEMISIA species. The flower heads, *bārang-bōīa.*

CICHORIUM ENDIVIA. The seeds, *kashnī.*

CACCINIA GLAUCA. The corollas, *gul-i-gāo-zabān.*

ANCHUSA ITALICA. The corollas, *gul-i-gāo-zabān.*

BORAGINEÆ. The bark of the roots, *ārīlang.*

SOLANUM NIGRUM. The dried fruit, *tāj-i-rizī.*

EREMOSTACHYS LABIOSA. The tubers of the roots, *agar-magar.*

LABIATÆ. The seeds, *badranj-bōīa;* the seeds, *kanoucha;* the herb, *sātar;* the herb, *ustukhudus.*

PLANTAGO species, *bārtang, bārang.*

MERENDERA PERSICA. The corms, *shambalīt, surinjān.*

Golī-sarnagun. The bulbs of a plant.

Gul-i-nīlī A brilliant blue flower.

Kawhai. A herb.

AGARICUS species. FUNGI, *ghārī-kun.*

Under Condiments—SARCOCOLLA, MANNA, CARUM, CUMINUM, PIMPINELLA, PSAMMOGETON; *anjadān* and *ājkān.*

Under Foods (other)—ORCHIS, ALLIUM, TULIPA.

Under Narcotics, not employed as drugs—CANNABIS.

IV. Drugs imported.

CITRUS AURANTIUM. The dried Orange, *post-i-nauring.*

CITRUS MEDICA, var. ACIDA. The dried Lime, *post-i-līmon.*

CASSIA species (OBOVATA ?). Senna leaves, *sanā-i-makaī.*

ENTADA species. The seeds, *kors-i-kamar.*

ACACIA CATECHU. The extract Catechu, *kāt-a-gulābī.*

TERMINALIA CHEBULA, TERMINALIA BELERICA, } Myrobalans. The fruit of these two species mixed, *halīla* and *balīla.*

VALERIANA WALLICHIANA. The root-stocks, *sambal-ultīb*, *malikak.*

STRYCHNOS NUX-VOMICA. NUX-VOMICA seed, *kachola.*

CORDIA MYXA. The fruit Sebesten, *sapistān.*

RHEUM species. The root-stock of a medicinal rhubarb from Central Asia, *rewand-i-chīnī.*

CINNAMOMUM CASSIA. Cinnamon bark, *dār-chīnī.*

CROTON TIGLIUM. Croton seeds, *hab-dilmaluk.*

RICINUS COMMUNIS. Castor-oil, *roghan-i-bazanjīr.*

PINUS species. The resin, *zuft*, *ilk.*

CURCUMA ZEDOARIA. The rhizomes, Zedoary, *jidwār*, *kachur.*

IRIS species. The rhizomes, Orris-root, *orisā.*

ACORUS CALAMUS. The rhizomes of the sweet flag, *agar*, *bach.*

SMILAX CHINA. Smilax root, *chōb-chīnī.*

Under Narcotics not employed as drugs—CANNABIS SATIVA.

Under Condiments—PIPER NIGRUM.

Minerals and their salts imported as drugs—
AMBER, MICA, SULPHATE of COPPER, ALUM, ARSENIC.

Animal produce, imported as drugs—
CUTTLE-BONE, MUSK.

Dub—دوب—of India, the grass CYNODON DACTYLON.

Dukhtar, or *dokhtar*—دختر—a daughter, a girl.

Dum—دم—or *dumb*—دمب—the tail.

Dum-i-gōsāla [Calf's-tail]. The plant APOCYNUM VENETUM.

Dum-i-rōba [Fox-tail]. The plant APOCYNUM VENETUM.

DUNG—*sargīn*, *sarkīn*; dried dung of oxen, *pāchak*, *kōnda.*

Over the portion of Afghanistan and Persia that I traversed, the dung of all cattle, when it can be so employed, is applied as manure to land, and only under exceptional circumstances is it used as fuel. That of sheep and goats is converted by destructive distillation into a tar, or pitch, *sīa-roghan*, which is used as a local application to protect the sores on cattle from flies.

Durunī—the Punjab salt-range name for the indigenous Pomegranate, PUNICA GRANATUM.

Dusha—the name for either ECHIS ARENICOLA or VIPERA OBTUSA.

DYE, or dye stuffs—*rang*.

DYER—*rang-rez*.

DYES.

I. Indigenous plants yielding dyes.

DELPHINIUM ZALIL. The flowers and stems, *zalīl*.

BERBERIS VULGARIS. The Barberry, an extract from the roots, *ībrān*.

ACER species. A maple, the bark of the root, *shākh*, *shaghz*.

PISTACIA TEREBINTHUS, var. MUTICA. The Baluchistan Pistacio; the leaves, *gōshwāra*, *barg-a-bana*.

PROSOPIS STEPHANIANA. The galled pods, *hechī*, *jinjak*; the dye, *zang-o-wach*.

PRUNUS CALYCOSUS. The bark of the roots, *sīa-ling*.

RUBUS species. The roots, *balourī*, *malourī*.

GUNDELIA TOURNEFORTII. The stems, *kangar*.

PUNICA GRANATUM. The rind of the fruit, *post-ānār*, *nāspāl*.

HALOXYLON AMMODENDRON. The green wood, *shākha-i-tāgh*.

RHEUM RIBES. The root-stock, *rewand*.

EUPHORBIA species. The herb, *shīr-go*, *shīr-gīā*.

EPHEDRA PACHYCLADA. The stems, *yehma*, *uma*, *huma*.

ALLIUM species. The bulbs, *pīāz*.

II. Cultivated plants that yield substances used in dyeing.

RHUS CORIARIA. The leaves, *barg-i-sumāghk*.

RUBIA TINCTORUM. Madder, the roots, *rodang*.

CARTHAMUS TINCTORIUS. Safflower, the florets, *gul-i-kājīra*.

III. Dye stuffs the products of indigenous plants that are exported.

The flowers and stems of DELPHINIUM ZALIL.

The extract of the roots of BERBERIS VULGARIS.

The rind and fruit of the Pomegranate, PUNICA GRANATUM.

IV. Dye stuffs the products of cultivated plants that are exported.

Madder, the roots of RUBIA TINCTORUM.

The rind and fruit of the Pomegranate, PUNICA GRANATUM.

V. Dye stuffs imported.

INDIGO, CATECHU, WALNUT BARK, TURMERIC, ZEDOARY, SAFFRON, ANILINE, COCHINEAL, ARSENIC.

VI. Local products employed in the dyer's art.

The galls of PISTACIA VERA, and Barilla.

VII. Products imported to be employed in the dyer's art.

The galls of an Oak, QUERCUS species. Areca nuts, the seeds of ARECA CATECHU, and Alum.

VIII. Products exported to be employed in the dyer's art.

The galls of PISTACIA VERA. The galled pods of PROSOPIS STEPHANIANA; the rind and fruit of the Pomegranate, PUNICA GRANATUM.

EARTH—soil, *yāghī, zamīn, khāk.*

EARTH-NUTS—*yāghī-shāk,* the tubers of CARUM species.

EBONY—the wood of a DIOSPYROS species.

EGG of the domestic fowl, *tukhm-i-murgh, khāīa.*

EGG-PLANT—BRINJAL, SOLANUM MELONGENA.

EGYPT—*misar;* EGYPTIAN—*misarī, misrī.*

Ejik-okharasī. The Turkoman term for FERULA OOPODA.

Elæagnus hortensis, *Bieb.* ELÆAGNACEÆ.

The Elæagnus. This is the Oleaster of Lindley, but by De Candolle the indigenous olive, *Olea Europæa,* is spoken of as the Oleaster, therefore it is better to drop the word Oleaster altogether, especially in Afghanistan, &c., where the two trees may both be met with in a wild state, and it would be impossible to know which was being spoken about if this synonym were used. *Sinjad, sinjid, sanjid, sinjit, sanjit;* Eastern Afghanistan, *jigda.* An indigenous tree, or large shrub, common in the hills at an altitude of 3000 feet, near running streams. Much cultivated in orchards for its fruit, which to a European palate does not seem worth eating, to me resembling in the mouth a mixture of dry cotton wool and ashes. The natives approve of it, and carry it with

them to eat on their journeys. A fine variety of the fruit grows near the Oxus; Mr Merk brought me some from there; it was certainly larger than that ordinarily obtainable, and if fineness means a nearer approach to cotton wool and ashes, then they certainly were finer. A spirituous liquor (from which is obtained the new Persian pick-me-up "Zingit") and an oil, *roghan-i-sinjit*, are said to be prepared from the fruit by the Turkomans. The wood is hard, and said not to be easily affected by water, hence it is chosen for building bridges, and is employed wherever wood has to be brought for any time in contact with water; it makes good fuel.

Elettaria Cardamomum, *Maton.* SCITAMINEÆ.

The Cardamom plant. Cardamoms, *hāl, hīl, hab-i-hāl, hab-i-hīl*, are imported in some quantities, both through Persia and India; they are much used as a condiment, and in addition to being locally consumed, are exported to Turkistan. The skins are called *hīl-i-kōza* or *hīl-i-gōza* and the seeds *dāna-hīl.*

ELM—ULMUS MONTANA, and another species.
ENGLISH—*angrez.*

Entada, *species.* LEGUMINOSÆ.

The seeds, *kors-i-kamar*, imported from India through Persia, to be employed in medicine.

Ephedra foliata, *Boiss.* GNETACEÆ.

Bandak, bandakai, bandukai, hum-i-bandak. So named from the corky nodes on the stems resembling knots or joints.

Ephedra pachyclada, *Boiss.* GNETACEÆ.

Hum, huma, haoma, um, uma, yehma, kōresh, khōresh, khushk-targ (Koin), *māo* (Khyber). A stiff bush, about three feet in height, consisting of close pressed, erect, leafless, jointed stems, occurring on stony barren ground, common from Quetta to Meshad. The fruit is red and fleshy, and is eaten by children. The stems are employed in dyeing yellow, and this colour is said to be given without the addition of any other material. The stems are also crushed into a powder

and applied to the gums in lieu of snuff, or burnt and the ashes mixed with snuff to make it more pungent. A decoction of the stems is employed in tanning the leather for water-bottles. The Afridi tribes in the Khyber crush the stems and allow them to soak for the night in cold water; this infusion is administered to children and others suffering from fever and boils. This is the plant that is at present considered by some to have been the Soma of the ancients, and is at the present time employed by the Parsees in Bombay in being burnt as incense at their places of worship.

Eragrostis cynosuroides, *Beauv.* GRAMINEÆ.

Drab, kīrtag, kīrthag. The sandy plains between Kani and Gazicha were covered with this grass, to the exclusion of all other plants: here in its method of growth and general habit it resembled extremely the Bent-grass of Scotland. It was looked upon as a valuable fodder grass.

Eremostachys labiosa, *Bunge.* LABIATÆ; and
Eremostachys Regeliana, *Aitch. et Hemsley.* LABIATÆ.

On the fibrous roots of these herbs are developed tubers or nodes, called *agar-magar* or *kohar-barar*, about the size of a walnut, but longer in form. These are collected by the Turkomans for rubbing down the body, after having taken a hot bath, in the same way as they employ the tubers of CURCUMA ZEDOARIA. On being crushed these tubers give forth a strong pungent aroma, like that usually associated with the CRUCIFERÆ, and very similar to that given off by the external bark-like covering of the turnip-like root of NEPETA RAPHANORHIZA; to the presence of an acrid substance is no doubt due their rubefacient properties.

Eremurus Aucherianus, *Boiss.* LILIACEÆ.

Charīsh, chirīsh, chīresh, sares, gīā-sares, sarīsh, sarīsh-i-kāhī, sires, siresh, siris, sirīsh, gīā-sirīsh, gīā-sirīshim.

This is a giant ASPHODEL, with a spike of most superb flowers sometimes four feet in height; it is abundant over the whole Badghis and in Persia, and abounds in the vicinity of Turbat-i-haidri in similar loamy, soft, sandy soil. It is a plant of great local importance, as from its fleshy

roots, and some say leaves also, by drying in a hot sand-bath, and grinding is prepared a flour, which when mixed with hot water yields a most tenacious vegetable glue, with which the natives make great vessels for holding oil and clarified butter. The cobblers employ it in preference to animal glue in their work, and I believe it might be introduced into England as a substance likely to prove useful in the arts. In India vessels made of it might be appreciated by the Hindu community if the raw material were directly placed into their hands, to enable them to construct their own vessels. In Persia these vessels are thus made, the tenacious gum is painted over a hollow earthen mould that has a single layer of some coarse country cloth covering it; on this cloth layer after layer of the glue is painted until a sufficiency is reached; this forms when dry a parchment-like skin, the mould is then broken up and removed through the mouth of the jar, and then usually the jar is sewed into a goat's hair sack. With ordinary moisture, or the amount of moisture likely to affect the jar through the goat's hair covering, no harm is likely to accrue, but if the jar is allowed to stand in water for days, it will in time dissolve or melt away. The flour made by grinding the dried roots or leaves is called *sarīsh-i-narm*, and the vessels *daba-i-sarīsh*. The leaves of this species are not employed as a vegetable; in some cases where they were so used by our camp followers they suffered terribly for their ignorance.

Eremurus aurantiacus, *Baker.* LILIACEÆ.

Sich, sīch. The young leaves of this species, and probably those of EREMURUS OLGÆ, are eaten as a vegetable, in a cooked state, by the natives both in this district as well as in the Kuram Valley of Afghanistan. I and my friends found it a really good and well-flavoured vegetable, well worth the attention of the market gardener in England. As a vegetable the plant would grow well, inasmuch as the leaves are cut over, without injuring, the growing axis of the plant, which would last for several years. I doubt, unless in exceptional localities, whether it would produce ripe seed in this country.

Ergot of Rye—*sīa-khāk.*

Rye, SECALE CEREALE, is the commonest weed in wheat

fields, and in many cases quite overruns the wheat; when ERGOT affects the Rye it is known to be injurious to the health of those partaking of the flour that has much of this "black earth" mixed with it.

Erianthus Ravennæ, *Beauv.* GRAMINEÆ.

In the Punjab, and by the Turkomans called *munj*, by the Persians *kirta, kandur*, and by the Baluchis *khāsh, khāshk.* A very common grass all over the country traversed, growing in huge clumps in the vicinity of water, to a height of from six to ten feet. The Turkomans make a rope, *rasmān-ālafī*, from it; for convenience they cultivate it round the margins of their fields, although it is quite indigenous in the surrounding country; the same takes place in the Salt-range of the Punjab, where I was informed it was also grown to bank up the fields, and thus prevent the heavy falls of rain from carrying off the soil, as well as to yield the farmer a ready supply of material for his ropes. It is curious that the same name for the grass, *munj*, should extend from the Punjab and the Indus to Turkistan. The reeds of this as well as of PHRAGMITES are called *nai*, as are sometimes those of ARUNDO; they are employed in basket work, in manufacturing screens, and such like.

Erianthus (?), *species.* GRAMINEÆ.

I met with a species of what I believe to be an ERIANTHUS, cultivated in gardens in Persia, for the reeds to be employed in making pens; it was called *kalmī.*

Erinaceus albulus, *Stoliczka.*

The hedgehog, *khār-pōsht-ak, khāl-pōsht-ak, khār-pusht-ak.*

Erodium cicutarium, *L'Her.* GERANIACEÆ.

Susan-ak.

Eruca sativa, *Lamk.* CRUCIFERÆ.

Māndāo, the oil *roghan-i-til.* Cultivated largely as a field crop for its seed, from which oil is extracted; the oil is used in diet, for burning, and in medicine.

Eugenia caryophyllata, *Thunberg.* MYRTACEÆ.
(Caryophyllus aromaticus, *Linn.*)

The clove plant. Cloves, *mekhak, kalamfur,* and *karanful ;* but this last name is applied by the Turkomans to the CAPSICUM fruit, and its pepper. Cloves are extensively imported through Persia; they are chiefly used by the better classes as a condiment mixed amongst tea.

Eulophia campestris, *Lindley.* ORCHIDEÆ.

Is by no means very rare in the Punjab, Baluchistan, and Afghanistan. Its tubers are collected in the Punjab, and make up the ordinary Salep of Lahore. When the present railway bridge was being constructed over the Chenab, at Wazirabad, some of the islands over which the bridge was built were one season covered with this orchis, specimens of which were sent to me by Captain Clerk, and which are now in the Herbarium at Kew.

Euphorbia cæladenia, *Boiss.* EUPHORBIACEÆ.

Ālaf-i-shīr-āg, āo-tarnak, āo-targanak, gāo-targanak. The milky juice of this plant is employed in lieu of rennet for curdling milk to make cheese. It, however, is said to give a very bitter taste to the curds.

Euphorbia cheirolepis, *Fisch. et Mey.* EUPHORBIACEÆ.

Palti, roz-gard, roj-gard. The Euphorbia of the sand-dunes of Baluchistan, where its milky juice was called *khīr.*

Euphorbia osyridea, *Boiss.* EUPHORBIACEÆ.

Gīshar. The long, whip-like shoots of this plant, during winter, much resemble the rod-like stems of PERIPLOCA APHYLLA.

Euphorbia, *species.* EUPHORBIACEÆ. Specimens No. 72, collected October 21, 1884.

Collected on the banks of the Helmand, where it was said to be employed as a dye, called *shīr-go, shīr-gīā.*

EUROPEAN—*farangī.*

EXTRACTS; of GLYCYRRHIZA GLABRA—Liquorice.
of BERBERIS VULGARIS—*ibrān.*
of ACACIA CATECHU—Catechu.

FALSE *anzarut*—the glue-like inspissated juice of MICRORHYNCHUS SPINOSUS.

Fandak—tinder.

Far—فر—*fār*—beauty, light, splendour.

Farang, frang—a term applied to the pot herbs ATRIPLEX FLABELLUM and ATRIPLEX MONETA.

Farangī—فرنگي—European, English.

Farōsh, farush—فروش—a seller.

Ferula—

The name for all the great Umbelliferæ, but more particularly for the FERULÆ, seems to be *kema, kāma, kamāī*, as a generic term.

Ferula fœtida, *Regel.* UMBELLIFERÆ.

The Asafœtida plant, *angōza-kema, anguza-kema, khurne-kema, khōra-kema.* The gum-resin Asafœtida *anguza*, by the traders and in India it is called *hīng.* The following is my description of the Asafœtida plant in a paper on "Some Plants of Afghanistan and their Medicinal Products," *Pharmaceutical Journal and Transactions,* December 11, 1886, p. 465:—

"In early spring great cabbage-like heads are to be seen distributed at intervals amongst the Asafœtida plants. Their peculiar forms represent the primary stage of the flower heads, enclosed and completely covered up by the large sheathing stipules of the leaves. In a few days these heads become transformed into the semblance of a cauliflower; from this period the stem bearing the inflorescence rapidly shoots upwards to a height of from four to five feet, its proportions being singularly massive and pillar-like. From a general calculation I found that only one out of a hundred plants bore a flowering stem. If you ask a native what plant this is, pointing to a flower-bearing one, he will tell you that it is '*khurne kema,*' and that it has nothing to do with the plants that yield Asafœtida. He will take out

his knife, remove the head, cut the stem from its base, strip off the few sheathing stipules that are still adherent to the stem, and in his hand you see what looks like a very large cucumber: from this he will remove the dark-green cuticle, and then slice away at the deliciously cool, soft, crisp, copiously milky stem, and eat slice after slice with the greatest gusto, and then say, 'Did I not tell you it was the edible *kema* and not Asafœtida?' 'Yes,' says an onlooker, 'You will stink like a camel for the next three months!' The method of collecting the drug, as far as I could learn, was as follows:—A few men, employed for the purpose by some capitalist at Herat, are sent to these Asafœtida-bearing plains during June. These take with them provisions consisting of flour, and several donkey-loads of water-melons, the latter in lieu of water, which is not only scarce there, but usually saline. The men begin their work by laying bare the root-stock to a depth of a couple of inches of those plants only which have not as yet reached their flower-bearing stage. They then cut off a slice from the top of the root-stock, from which at once a quantity of milky juice exudes, which my informant told me was not collected then. They next proceeded to cover over the root by means of a domed structure, of from six to eight inches in height, called a *khōra*, formed of twigs and covered with clay, leaving an opening towards the north, thus protecting the exposed root from the rays of the sun. The drug collectors return in about five or six weeks' time, and it was at this stage that the process of collecting came under my personal observation. A thick gummy, not milky, reddish substance now appeared in more or less irregular lumps upon the exposed surface of the root, which looked to me exactly like the ordinary Asafœtida of commerce, as employed in medicine. This was scraped off with a piece of iron hoop, or removed along with a slice of the root, and at once placed in a leather bag, the tanned skin of a kid or goat. My guide informed me that occasionally the plant was operated upon in this manner more than once in the season. The Asafœtida was then conveyed to Herat, where it usually underwent the process of adulteration with a red clay, *tāwa*, and where it was sold to certain export traders, called *Kākri-lōg*, who convey it to India. On August 17, when I crossed the great

Asafœtida plains where this drug is chiefly collected, except for the small domes over each root there was not a leaf or a stem or anything left to point to the fact that any such plant had ever existed there, the heat and winds of July and August having removed every trace.

"In Northern Beluchistan, after much difficulty and searching, I came across one root of Asafœtida, which I believe belonged to a different species; but I did not see a single stem, or even the remains of one, although we traversed immense plains upon which these fragments of leaves still existed, and where, I believe, during summer the plant must have grown in abundance."

On the road to Meshad from Turbat-i-haidri, about four miles from the latter is a mountain called Koh-surkh, or the red hill; in the vicinity of this hill, yearly a large amount of Asafœtida is collected and sent on to Meshad. Lieut.-Col. H. B. Lumsden, now Sir Harry Burnett Lumsden, K.C.S.I., says, "the low ranges adjacent to the Anardara basin are the great Asafœtida producing tracts during the three hottest months of the year, numbers of Kakars resort there to collect that gum" (Appendix to Davies' *Report on the Trade and Resources of the Countries on the North-Western Boundary of British India,* viii. page xlix).

The following is an account given of the collecting, &c., of Asafœtida by Dr Bellew, now Surgeon-General Bellew, C.S.I., when he was attached to the Kandahar Mission in 1857, from Davies' *Report on the Trade, &c.,* Appendix vii. page xli:—

"The frail vaginated stem, or the lower cluster of sheathing leaves, the former belonging to old plants, and the latter to young ones, is removed at its junction with the root, around which is dug a small trench about 6 inches wide and as many deep. Three or four incisions are then made round the head of the root, and fresh ones are repeated at intervals of three or four days, the sap continuing to exude for a week or a fortnight, according to the caliber of the root. In all cases, as soon as the incisions are made, the root head is covered over with a thick bundle of dried herbs or loose stones as a protection against the sun; when this is not done the root withers in the first day and little or no juice exudes. The quantity of Asafœtida obtained from each root varies

from a few ounces to a couple of pounds weight, according to the size of the root, some being no bigger than a carrot, whilst others attain the thickness of a man's leg. The quality of the gum differs much, and it is always adulterated on the spot by collectors before it reaches the market. The extent of adulteration varies from one-fifth to one-third, and wheat or barley flour or powdered gypsum are the usual adulterants. The best sort, however, which is obtained solely from the node or leaf bud in the centre of the root head of the newly sprouting plant, is never adulterated, and sells at a much higher price than the other kinds. The price of the pure drug at Kandahar varies from four to seven Indian rupees per *man-i-tabriz* (about 3 lbs.), and of the inferior kinds from one and a half to three and a half Indian rupees per *man*. The Asafœtida is commonly used by the Mahommedan population of India as a condiment in several of their dishes, and especially mixed with *dal*. It is not an article of general consumption in Afghanistan, though often prescribed as a warm remedy for cold diseases by the native physicians, who also use it as a vermifuge. The fresh leaves of the plant, which have the same peculair stench as its secretion, when cooked are commonly used as an article of diet by those near whose abode it grows. And the white inner part of the stem of the full-grown plant, which reaches the stature of man, is considered a delicacy when roasted and flavoured with salt and butter."

Dr Bellew's and my own report combined give a very fair general idea of how the drug is collected, and to what other uses the plant is put; but it would be most interesting to see the whole stages gone through, and this could only be done by residing the entire season at one of these Asafœtida producing districts, along with some of the great nomad tribes, who make the collection of this drug one of their sources of livelihood.

I would bring to your notice a paper in the *Journal of the Pharmaceutical Society of London* for July 14, 1888, on "The Asafœtida Plants," by E. M. Holmes, F.L.S.; from this I learn that in collecting these Ferulas one ought to be very careful in noting, at the time of collecting, any differences that may exist between the flowers that are relatively male and those that are female. In my specimens of FERULA FŒTIDA the

flowers (male and female) are white. Bunge describes the male flowers of his SCORODOSMA FŒTIDUM as yellow, and the female, or hermaphrodite flowers, as white. Mr E. M. Holmes is of opinion that here we may still have two species mixed up.

Ferula galbaniflua, *Boiss. et Buhse.* UMBELLIFERÆ.

The Galbanum plant, *bādra-kema, kema-bīrzad, bārzat, bārzad, bīreza, bīrīje, bīrizan, bīrzad, bīrzat, bīrzand.* The gum-resin Galbanum, *jāo-shīr, gāo-shīr, shilm-i-bārzat, shilm-i-bādra-kema.*

"This plant differs from Boissier's description in having a perfectly hollow stem and woolly petals; but this wooliness so entirely disappears in the herbarium, that unless seen originally one would doubt its having ever existed. Notwithstanding these discrepancies, we have no doubt that it is FERULA GALBANIFLUA, Boiss. et Buhse. In habit it differs from FERULA FŒTIDA and DOREMA AMMONIACUM in growing gregariously and in its being found in greatest luxuriance in moister localities, as in the Badghis near Gulran, where it grows in the sandy loam of that district. Its early root-leaves spring from the ground like a fountain of soft green moss, and in this state it is greedily devoured by camels. The stem, which grows very rapidly, is of a semi-opalescent orange colour when young and perfectly glabrous. When in full blossom the flower is of a brilliant orange-yellow; as the fruit forms and ripens the colour changes from the base of the plant upwards, showing various autumnal tints. The stem is thick at the base, but tapers suddenly upwards, terminating in an elegant tall, loose, panicled inflorescence, reaching a height of about four feet. The stem, on injury, from its earliest stage of growth, yields an orange-yellow gummy fluid which very slowly consolidates, usually forming on the stem like the grease on a guttering candle, and possessing in common with the whole plant when crushed a strong odour resembling that of celery. The gum is commonly found adhering to the lower portions of the stem, and is so tenacious that when subsequently examined pieces of the plant are frequently found attached to it. No artificial means are employed to my knowledge in the collection of this drug. It is stated to be an article of export through

Persia *viâ* the Gulf to Arabia and India" ("Some Plants of Afghanistan and their Medicinal Products," *Pharmaceutical Journal and Transactions*, December 11, 1886, p. 466).

The gum-resin Galbanum that I purchased at Meshad, exactly corresponded to that which I myself collected off the plants in the Badghis. It was there said to have been imported from Yezd, in Fars, Persia. It was all in solid lumps of a yellow-orange colour, turning much browner upon exposure to light. For the chemical analysis of a sample of this Galbanum I was indebted to Mr E. G. Baker, who read a paper on the subject at the Pharmaceutical Society of London, see *Journal and Transactions*, December 11, 1886, page 468. This gum-resin burns with a peculiar odour, and hence it is as much exported to India on this account as it is for its uses in medicine. The fruiting stem is hung as a charm about a house when parturition is about to take place in order to keep off devils and all evil spirits, and the gum-resin is administered to the patient, mixed with milk. The resin is also applied to sores and wounds.

Ferula oopoda, *Boiss.* UMBELLIFERÆ.

Ejik-okharasī, kilkī, kalkilī. This Ferula is remarkable for having the stipules of the leaves developed into great cups or bowls surrounding the main stem.

Ferula ovina, *Boiss.* UMBELLIFERÆ.

The sheep, or mountain Ferula, *kema-kohī, stourga.* In certain localities in the Badghis, this covered the sides of the hills, and made grand pasturage for goats and sheep.

Ferula suaveolens, *Aitch. et Hemsley.* UMBELLIFERÆ.

Sambal, sanbal, sumbal, sombala. The large root of this plant whilst fresh was strongly scented, but it lost all its odour on drying. The roots were said to be exported on account of their scent, and this may prove to be one of those roots with which the true Sumbul, FERULA SUMBUL, *Hk. fil*, is adulterated, the latter is a Central Asian plant.

FIBRES—

The only plant cultivated to yield fibre in these districts is GOSSYPIUM HERBACEUM. The indigenous plants yielding

fibre are ASTRAGALUS, several species, APOCYNUM VENETUM, and ERIANTHUS RAVENNÆ.

Cotton is very extensively cultivated as a field crop; the quality of the fibre, however, is poor, and is far surpassed by the produce of Turkistan. The soil in Western Afghanistan and in Eastern Khorasan is not favourable for the production of a good fibre, owing to the want of loam. Almost the whole of the cotton grown is expended in the manufacture of home-made material for local use. Flax, LINUM USITATISSIMUM, is rarely grown, and when it is, as in Turkistan, it is for its seed alone for oil, and not for fibre. In Turkistan a fibre, for rope, is made by steeping in water the refuse stems of CANNABIS SATIVA. From APOCYNUM VENETUM is collected a fine fibre which in these parts is chiefly manufactured into rope or twine, but in Turkistan a kind of linen is made from it. Here no use is made of the fibre of ERIANTHUS RAVENNÆ, but in Turkistan they make rope from it, and cultivate the plant along the margins of their fields for this purpose. The people here, when requiring a piece of twine, and certain of the ASTRAGALI are handy, pull up their roots, and from the bast and bark of the roots make what twine they may require, or employ the bark from the young shoots of an Elm, as they do in Kashmir and Southern Afghanistan.

Ficus Carica, *Linn.* URTICACEÆ.

The Fig. The cultivated fig, *anjīr;* the indigenous fig, *anjīr-i-kohī.* The fig is cultivated in all the better class of orchards, and the fruit is eaten in a fresh state. I do not remember ever seeing any dried figs in any of the village shops. The indigenous shrub I first met with at Tirpul, on the face of some sandstone rocks, growing amongst the clefts, where a very little water percolated. It was in great luxuriance on the southern exposure of Sim-koh, forming a good-sized shrub from eight to ten feet high, growing very characteristically on, as it were, projecting mounds of soil, and each bush was made up of numerous close-set shoots from one general great root-stock. At Kush-ao, in Khorasan, on the 20th August I saw several bushes, which were more spreading and woody than those at Sim-koh. Near Kush-ao the bushes were said to be very numerous, both on the plains in the open and in the clefts of rocks; where they exist

in the plains water is considered to be close to the surface. In some localities the bushes are so numerous that they form a copse, and with them the flocks of goats and sheep play terrible havoc. At Sangun I found round the gardens great hedges of figs; these I was told were the wild figs in cultivation. Dried figs, strung on strings like beads, are imported in small quantities into north-west India from Afghanistan.

FIELD-BEAN—VICIA FABA.

FIG—FICUS CARICA.

Fīlfīl—فلفل—*pīlpīl*—Pepper, in these parts the name is applied to red pepper, CAPSICUM species.

Fīlfīl-i-surkh—فلفل سرخ—[red pepper], CAPSICUM species.

FIR—the only fir tree of the seregions is the cultivated PINUS HALEPENSIS.

Fīroza—فیروزه—a Turquoise, azure, blue, rare, noted.

FLAX—the fibre of LINUM USITATISSIMUM.

FLINT—*sang-ātish, sang-chakhmākh, sang-chakmāk*; called by the Turkomans *chakh-māk-dāshe*, and by the Baluchis *khal*.

In the hills to the north of Kalla-nao, near Kalander-abad, black flints are plentiful, and are largely worked for there. As pieces of pottery were met with amongst the ruins on the Helmand, so throughout the Badghis all sorts of odd bits of flint that had apparently been used and thrown away were picked up. Flint locks for weapons are now quite out of use in these regions.

FLOUR—*ārd, aurd*.

The common flour of the country is that of imported Indian corn, the lesser millets, wheat, occasionally barley; in the districts of Bala-morghab and Maimana the flour in ordinary use consists chiefly of Maize with Sorghum, and that of the spiked Millet. In the Badghis, the fruit of the wild pear, PYRUS species, as well as that of CELTIS CAUCASICA, and of dried Mulberries, the fruit of MORUS ALBA, are all converted into flour and mixed with ordinary flour to be made into bread; so also are the seeds of LUFFA and some other of the CUCURBITACEÆ.

FLOWER—*gul.*

FODDER, herbage—*kā, ka, gīā, gīāgh, ālaf, wāsh, khāsh, gaz.*

I. Indigenous herbs and shrubs noted for yielding good fodder.

a. That are browsed upon whilst growing.

CAPPARIS SPINOSA.
TAMARIX, several species.
ASTRAGALUS, all the species.
ALHAGI CAMELORUM.
PROSOPIS STEPHANIANA.
CRATÆGUS OXYACANTHA.
PRANGOS PABULARIA.
FERULA OVINA.
FERULA GALBANIFLUA.
CODONOCEPHALUM PEACOCKIANUM.
ARTEMISIA MARITIMA.
ARTEMISIA CAMPESTRIS.
PERIPLOCA APHYLLA.
STACHYS TRINERVIS.
PTEROPYRUM AUCHERI.
HALOXYLON AMMODENDRON.
SALSOLA, several.
ANABASIS, species.
CALLIGONUM COMOSUM.
POPULUS EUPHRATICA.
CAREX PHYSODES.
CAREX STENOPHYLLA.
PENNISETUM DICHOTOMUM.
POLYPOGON LITTORALE.
ARISTIDA PLUMOSA.
ERAGROSTIS CYNOSUROIDES.
POA BULBOSA.
AGROPYRUM CRISTATUM.
HORDEUM ITHABURENSE.
HORDEUM CAPUT-MEDUSÆ.

b. Collected for immediate use.

CAPPARIS SPINOSA.
CYNANCHUM (?), sp.
OROBANCHE, species.
BALANOPHORA, species.
UNGERNIA TRISPHÆRA.
PENNISETUM DICHOTOMUM.
ARUNDO DONAX.
PHRAGMITES COMMUNIS.

c. Stored for winter consumption.

CRAMBE CORDIFOLIA.
GUNDELIA TOURNEFORTII.

II. Cultivated.

a. As fodder.

TRIGONELLA FŒNUM-GRÆCUM.
MEDICAGO SATIVA.
TRIFOLIUM RESUPINATUM.
HORDEUM VULGARE.

b. The refuse of cultivated plants employed as fodder.

The straws of the Cereals and Pulses, and the refuse from the various seeds after the extraction of their oil; the unripe cotton

pod; the branches of the cultivated willows, and of the Jujube, ZIZYPHUS VULGARIS, in early spring whilst other green fodder is scarce.

III. The following plants are hurtful, if not actually poisonous, as fodder.

NERIUM ODORUM.	NITRARIA SCHOBERI.
STELLERA LESSERTII.	ZYGOPHYLLUM, species.

IV. Animals will not eat—

SOPHORA PACHYCARPA.	CERCIS SILIQUASTRUM.
AMMOTHAMNUS LEHMANNI.	

TRIGONELLA FŒNUM-GRÆCUM, MEDICAGO SATIVA, and TRIFOLIUM RESUPINATUM are cultivated as fodder, chiefly for the use of horses and mules. These are usually grown in orchards under the shade of trees; they are given either in the green state freshly cut or as hay. Owing to the rapidity of drying in this climate this hay retains its green colour, and is much relished by all cattle. It is sold in the bazaars twisted in the form of ropes, and made up into small bundles convenient for both buyer and seller. During early summer barley in a young green state is much employed as fodder. In winter the crushed straw of wheat and barley, and of the various pulses are the usual fodder supply of the country, to which occasionally the refuse from the various oil seeds, after the oil has been extracted, is added. The most important of the indigenous plants collected for fodder is a large thistle-like herb, GUNDELIA TOURNEFORTII; this, as already stated, covers vast tracts of country to the exclusion of all other plants; from its general fierce spinous condition it appears whilst growing as quite unfit for fodder; this, however, is not the case. In autumn the whole plant rapidly dries, and in this condition easily breaks up, when it is collected and housed, or stacked, and employed as winter fodder for sheep and goats. It is so abundant that except the carriage there is little difficulty in collecting any quantity of it. In Persian territory I saw it being stacked in the localities where it grew for future transport to the villages. The turnip-like roots of CRAMBE CORDIFOLIA are largely collected in the Badghis, at the nomad encampments, and are stored as turnips are in Scotland, for the use of camels during the most

severe part of the winter. These roots are ordinarily very woody, and are far beyond the masticating power of any animal except the camel.

NERIUM ODORUM is very poisonous to camels and donkeys —the donkey by experience keeps from it, camels never learn to do so. Where the shrub is found occurring amongst TAMARIX thickets, near water, as in Baluchistan, it proves very destructive to camels. It is as well to note that there are two natural orders that contain plants that are poisonous to camels, and which they themselves will not touch unless pressed by hunger, these are ZYGOPHYLLEÆ and THYMELÆACEÆ. The plants in ZYGOPHYLLEÆ are NITRARIA SCHOBERI, MILTIANTHUS PORTULACOIDES, ZYGOPHYLLUM FABAGO, and ZYGOPHYLLUM ATRIPLICOIDES; in THYMELÆACEÆ—STELLERA LESSERTII and DAPHNE OLEOIDES. Of the last plant, in my first paper on the Kuram Valley of Afghanistan (*Linn. Soc. Journal of Botany*, vol. xviii. page 90), I say, "Camels will not eat this shrub except when very hungry; it is poisonous, producing violent diarrhœa. I feel certain that much of the mortality of camels in the Kuram division was due to the prevalence of this shrub. It was noticeable when camels were grazing that the DAPHNE was not touched until all the other shrubs had been eaten."

There are three of the Leguminosæ that I would also be careful of, viz., CERCIS SILIQUASTRUM, AMMOTHAMNUS LEHMANNI, and SOPHORA PACHYCARPA, for the simple reason that if camels are watched it will be noticed that they never browse on these wilfully.

LYCIUM BARBARUM is certainly not hurtful to camels, although at the encampment at Zaru it looked as if this shrub had been the cause of several deaths.

Fōlād, faulād—فولاد—steel.

FOODS—see Beverages, Bread, Cereals, Condiments, Fruits, Milk and its products, Oils, Pulse, Vegetables. Other substances (employed either as foods, condiments, or as medicines).

Other substances employed as foods. There are certain substances which it is very difficult to classify under any special head, as, though used as food—say Mannas by the

Persians and Afghans—at the localities where they are collected owing to their cheapness there, once these begin to be exported their value rises, and they come either under the head of condiments or medicines; again, Orchis tubers are treated as medicines by the natives of Afghanistan and Persia, for even in those localities they are difficult to obtain, high priced, and not within the reach of the natives as a food. Exported say to India, Salep is looked upon as a superior class of food for babies and the sickly, and therefore may be classified as a highly nutritious food or as a medicine. The rhizomes of POLYGONATUM VERTICILLATUM are employed as a strength-giving food in the Kuram Valley, where it was obtainable in quantity, but is in the trade treated rather as a medicine. Sarcocolla is considered a food by the wealthier classes of Persia; in India, and out of Persia, it is treated in the light of a drug.

Produced locally—MANNAS, ORCHIS tubers, POLYGONATUM rhizomes, SARCOCOLLA; and all these are exported either as medicines or condiments.

FORESTS—*darakht-i-stān.*

True forests of POPULUS EUPHRATICA, with several species of TAMARIX, exist on the islands and banks of the Helmand and Hari-rud rivers. On the Hari-rud, at its most northern point, where I travelled, near Kumani, HALOXYLON formed a great part of the forest; a country covered with a forest of HALOXYLON is called Tagh-i-stan by the Persians. On the great sand-dunes of Baluchistan this HALOXYLON formed rather a copse than a forest. On the Helmand TAMARIX ARTICULATA occurred, forming thin forests of very large bulky trees, in certain special localities. PISTACIA VERA exists in large forests in the Badghis, at an altitude of from 2000 to nearly 4000 feet above the sea-level; where these forests occurred the districts were called *pistalik*, in the same way as places noted for the profusion of the Elæagnus in Eastern Afghanistan are called *jigdalik* or Jagdalak; one of the celebrated passes into Afghanistan is so named, although even in Griffith's time there was no sign of the tree then there. JUNIPERUS EXCELSA was in abundance as very large, though not lofty, trees along the ridges of the hills above 3000 feet altitude both in the Badghis and Khorasan.

LONICERA NUMMULARIFOLIA was still more restricted in its localities. The most extensive forest that I saw of this tree was in Khorasan, to the south-west of Bezd, where it is distributed thinly over a good extent of country on the south-western slopes of the hills, giving a very park-like feature to the grassy uplands.

FOX—*rōba, sālab.*

FOX-TAIL—APOCYNUM VENETUM.

Fraxinus oxyphylla, *Bieb.* OLEACEÆ; and another species.

The Ash, *banaush, binaush, beṅaush.* The seeds, *tukhm-i-banaush.* A large tree, cultivated in orchards, near houses, and surrounding shrines. The wood is much valued for ploughs and other agricultural implements; next to the Elm it is considered the best wood for oil-mills. The seeds are held in esteem as a valuable medicine, and are imported into Persia from Herat, where these trees are said to be numerous.

FRANKINCENSE—Olibanum, the gum-resin of BOSWELLIA species.

FRENCH-BEAN—PHASEOLUS VULGARIS.

FRUITS.

a. Cultivated fruits.

The Afghans, Persians, and Turkomans live largely on fruit, which, either fresh or dried, in one form or other, is usually added to their ordinary diet; when travelling they always carry with them a small supply of dried fruits to be eaten as they proceed upon their journeys. The portion of the Hari-rud Valley that I visited produces little fruit, but around Herat itself, and eastwards from it, the country is said to be prolific in fruit, as is Khorasan. There is at present none grown in the Badghis, yet Maimana is famed for its fruits, especially its walnuts. The gardens of Herat are celebrated for the fine and numerous varieties of grapes produced in them, Turbat-i-haidri and Meshad in Khorasan are equally so. Melons are grown everywhere; the variety *sardā*, collected late in the season, is a fruit very largely exported to India from Herat; and the Water-melon,

cultivated in the open fields, may be looked upon as one of the chief food crops of the country. Apples are chiefly grown in Persia, and thence imported into Herat for further exportation. The town of Anar-dara, fully a degree and a half south of Herat, is famous for its Pomegranates, which are largely exported to India; those produced in Herat itself are few and, comparatively speaking, poor in quality. The Peach, Nectarine, and Almond are said to attain their greatest perfection in Persia; certainly those I saw and ate at Meshad were of very superior quality. Owing to the great abundance of all kinds of fruit, and the climate being one suitable for it, most of these are dried for consumption locally during the rest of the year, or for exportation. Hence in all bazaars Raisins, Prunes, dried Apricots, dried Mulberries, dried Cherries, Jujubes (ZIZYPHUS), ELÆAGNUS, and the dried flesh of Melons, are ordinarily met with on sale, less frequently dried Peaches and dried Apples. Currants, or Corinths (*ziriskh-shīrīn*), are a product of Kafiristan and of Eastern Afghanistan.

Maimana, as already stated, is famed for its Walnuts, which it exports largely; at Herat they are said to be plentiful, but the only place where I saw the tree growing in perfection was at Bezd, where the trees quite equalled the grand groves of Shalizan in the Kuram Valley.

Cultivated for their fruits—

ZIZYPHUS VULGARIS. Jujube.
VITIS VINIFERA. Vine.
PISTACIO VERA. Pistacio.
PRUNUS species. Plum.
PRUNUS CERASUS. Sweet cherry.
PRUNUS CERASUS. Bitter cherry.
PRUNUS ARMENIACA. Apricot.
PRUNUS AMYGDALUS. Almond.
PRUNUS PERSICA. Peach.
PRUNUS PERSICA. Nectarine.
PYRUS CYDONIA. Quince.
PYRUS COMMUNIS. Pear.
PYRUS MALUS. Apple.
PUNICA GRANATUM. Pomegranate.
CUCUMIS MELO. Melon.
CITRULLUS VULGARIS. The Water-melon.
ELÆAGNUS HORTENSIS. The Elæagnus.
MORUS ALBA. Mulberry.
MORUS NIGRA. Royal mulberry.
FICUS CARICA. Fig.
JUGLANS REGIA. Walnut.

b. Fruits yielded by indigenous plants.

The nuts collected from the indigenous forests of PISTACIA VERA are of great commercial importance, both as an article of diet amongst the people, and also for exportation, being obtained in immense quantities from the forests in the Badghis, whence they are carried all over the country, besides being exported to Persia, Afghanistan proper, and India. Barberries are considered rather in the light of a condiment; preserved as a pickle they are greatly used in the diet of the better classes, and for similar reasons much exported to India. The fruit of the indigenous ELÆAGNUS and of the Jujube cannot be distinguished from the cultivated forms except by size; these are chiefly carried and eaten on journeys, hence one of the names for the fruit of the Elæagnus, "Caravan-dates." The fruit of CELTIS CAUCASICA is much eaten and highly extolled, but it is chiefly used as a flour, to be made into bread with ordinary flour. The wild fig is much smaller than the cultivated fruit, but I was told that it was excellent eating. I had not an opportunity of collecting it when it was actually ripe.

Indigenous plants yielding fruits that are of importance—

BERBERIS VULGARIS. Barberry.
ZIZYPHUS VULGARIS. Jujube.
PISTACIA VERA. Pistacio.
PYRUS, species. Wild pear.
ELÆAGNUS HORTENSIS. Elæagnus.
CELTIS CAUCASICA. Celtis.
FICUS CARICA. Fig.

Fruits exported—

The greatest exportation occurs in Raisins, Pistacio nuts, Walnuts, the dried flesh of Apricots, Prunes, and Almonds; the next, in fresh Grapes packed between layers of cotton, in small light circular boxes, made of poplar or willow wood, much resembling the boxes figs used to be packed in called "drums," Quinces, Pears, Apples, Pomegranates, *sardā* Melons, and BERBERIS fruit.

Fruits imported—

The Date is largely imported from Southern Persia, and said to be from Arabia through Persia to Afghanistan and

to Turkistan. The trade with Arabia is done chiefly by pilgrims to Meshad, or return pilgrims from Mecca, who depend upon the exchange or sale of some such commodity to pay their way whilst travelling. Limes, Lemons, and Oranges in a fresh state are extensively imported into Afghanistan and Turkistan from the Caspian provinces of Persia, where the trees grow in great luxuriance.

FUEL—*hīma, kōnda.*

In the vicinity of all villages fuel is extremely difficult to be got, and is always an expensive item in one's daily bill. The inhabitants have long ago consumed the little that existed in the land surrounding the village, and when the village is a large one, people are seen going long distances to collect a sufficiency for their daily requirements. As a rule much fuel is not consumed by the people of these regions, as most of their food and bread is cooked at public resorts, and the luxury of a fire lighted to keep them warm is rarely adopted. Their houses are all built of sun-dried bricks owing to this great scarcity of fuel, and it is only the houses of the great and rich that are to be seen built with burnt bricks. By travellers the stems and twigs of the ARTEMISIÆ are generally most sought for as fuel, for this purpose being excellent, always apparently being dry and ready to burn, as well as being easily handled in making a fire; next to these the smaller branches of the Tamarisks.

Our camp followers, once they had struck upon the roots of the Liquorice plant, steadily searched for it, but this was more to make a good hot fire to keep themselves warm than to cook with. Whilst resident at Bala-morghab, those who had chimneys built into their tents found the dry wood of PISTACIA VERA by far the best fuel the country could produce, owing to the amount of resin present in the wood, and next to it that of CELTIS. The wood of HALOXYLON AMMODENDRON was highly extolled by the natives as giving a valuable slow-burning fire, producing great heat, and that a log once lighted would burn slowly for days, no trouble being required to keep the fire in. Notwithstanding the difficulty of obtaining fuel, cow-dung is rarely used for this purpose.

FUNGUS—*samārukh, gharī-kun.*

Gab—گب—*gap*—گپ—thick, large, gross, dense.

Gab-chīr, gap-chīr, gab-shīr, gap-shīr—[thickened milk]. Manna, and the plant producing it, COTONEASTER NUMMULARIA.

Ga-bīna—[the grass gum]. A form of the gum Tragacanth, or the shrub yielding it, ASTRAGALUS HERATENSIS, and other species. *Gabīna* and *bagīna* in the Kuram Valley meant honey.

Gach—گچ—Gypsum; Plaster of Paris.

Gāl—گال—a red variety of the Millet, PANICUM MILIACEUM.

GALBANUM—the gum-resin of FERULA GALBANIFLUA.

GALLS—

The galls that form on the leaves of PISTACIA VERA, *boz-ganj*; these are employed in dyeing silks, for which purpose they are largely exported from the Badghis to Persia, Afghanistan proper, and in smaller quantities to India; some even to Turkistan. *Hechī, kechī, jing-jing-bānu* are the galled pods of PROSOPIS STEPHANIANA; they are employed as a dye stuff, as well as being used in dyeing and tanning, chiefly locally, but are also exported through Persia to India. *Māju, māzu*, are either the galls of TAMARIX GALLICA, which are scarcely used, and not exported, or are the galls of a species of Oak, QUERCUS, that is said to grow in Persia; these are largely imported from Persia for dyeing and tanning. *Kīsa* is a very prominent gall that occurs on the leaves of an Elm, ULMUS species, but which is not employed. The presence of a flat gall following the curve of the leaves of PISTACIA TEREBINTHUS, var. MUTICA, obtains for that leaf its name *gōsh-wāra* [like the ear].

Gand—گند—anything fœtid, a bad smell, a testicle.

Ganda—گنده—fœtid, stinking, a ball of anything.

Ganda-firoza—گنده فیروزه—[the rare scented]. The gum-resin Olibanum, BOSWELLIA species; or Turpentine.

Gandam—گندم—*ganam*—Wheat, TRITICUM VULGARE.

Gandamak—گندمک—[Wheatling], ARENARIA HOLOSTEOIDES; the name of a locality on the Khyber-Cabul route.

Gandam-dār—[Wheat-like]. Rye, SECALE CEREALE, a common weed in all wheat fields.

Ganj—گنج—or *ghanj*—غنج—a store, a granary.

Gāo—گاو—a cow, a bull, an ox.

Gāo-gōsh—[Cow's ear], APOCYNUM VENETUM.

Gāo-sāla or *gō-sāla*—گوسالہ—a calf.

Gāo-shīr—[Cow's milk]. Galbanum, the gum-resin of FERULA GALBANIFLUA.

Gāo-targanak—[Cow herb], EUPHORBIA CÆLADENIA.

Gāo-zabān—[Cow's tongue]. This word might well stand for our technical term Boraginaceous, as it is applied to several plants of that order, CACCINIA GLAUCA, ANCHUSA ITALICA, MACROTOMIA PERENNIS, and MACROTOMIA BENTHAMI.

Gaodar—گودر—*gao-dār*—the wild Oat, AVENA FATUA.

Gāoras—گاورس—the grain of the Italian Millet, PENNISETUM ITALICUM.

Gap—گپ—*gab*—thick, large, gross, dense.

Gard—گرد—to revolve, turn round, the sun; dust, applied technically to the resinous dust that falls off the CANNABIS SATIVA plant after it has been hung up to dry; this dust when collected is *chars, charas.*

GARDEN—*bāgh, bāghīcha, chaman.*

GARLIC—ALLIUM SATIVUM.

Garm—گرم—hot, warm.

Garma—گرمہ—Melons that ripen early, first fruits.

Gash—گش—elegant, pretty.

Gash-gōshī—[elegant-eared], TRAGOPOGON COLORATUM.

Gāz—گاز—pasturage.

Gaz—گز—TAMARIX species.

Gaz-angabīn—گزانگبین—also pronounced *gaz-anjabīn*—[Tamarisk Honey]. The manna of TAMARIX GALLICA, var.

Gaz-māzu—گزمازو—[the gall (yielding) Tamarisk], TAMARIX GALLICA.

Gaz-kera—[the Tamarisk (employed to make) baskets], TAMARIX GALLICA, var.

Gaz-shakar—گزشکر—[Sugar-Tamarisk]. The Manna yielding Tamarisk, TAMARIX GALLICA, var.

Gaz-shōra—گزشورہ—[bitter, or saline, Tamarisk], TAMARIX TETRAGYNA.

Gaz-surkh—گزسرخ—[Red-Tamarisk], applied to TAMARIX MACROCARPA, and also to TAMARIX GALLICA.

Gazak—گزک—a devil, a bird trap.

Gazella subgutturosa, *Güld.*

The Gazelle, the male *āhu* or *taka-i-āhu*, the female *bōz-i-āhu* or *burz-i-āhu.*

Gazu—گزو—*gaju*—a Tamarisk.

Gentiana Olivieri, *Griseb.* GENTIANACEÆ.

This by Boissier is considered the hot country Gentian, which it most certainly is, *gul-khale.*

Get—Baluchi for a Willow, SALIX species.

Ghanj—غنج—a store.

Ghārī-kun—غاریقون—Arabic for AGARICUS. Is the Arabic word from the Greek *agarikon?* or is it a word taken from the East by the Greeks? It is curious to note that species of Fungi in Central Asia are employed for stopping hæmorrhage in wounds, and the word is said to mean "blood-stopper" in Persia—غاری—*ghārī*, is a sponge, and the—قون—*kun*, may be for *khun*—خون—blood.

Ghī—گهي—Hindustani for clarified butter, *rōghan-i-zard.*

Ghīs—غيس—abundance.

Ghōja, ghuja—غوزه—*ghōza, ghuza*—غوزه—a nut, a cotton pod, a cardamom.

Ghulām—غلام—a boy, a servant, a slave.

Gīā—گياه—گيا—green herbage, grass, hay, fodder.

Gīā-shīr—گياه شير—[milk-herb]. Any milky plant, EUPHORBIA species.

Gīā-shutar—گياه شتر—[Camel-shrub]. An ASTRAGALUS, the Tragacanth plant.

Gīā-sares—گياه سريس—or *gīā-sarīshim*—گياه سريشم—*gīā-sirīsh, gīā-sirīshim*—a plant whose roots are very viscous, EREMURUS AUCHERIANUS.

Gīāgh—گياغ—grass, herbage.

Gil—گل—clay.

Gil-i-barang—گل برنگ—a coloured clay from Burang or Fara.

Gil-i-surkh—گل سرخ—a red clay.

Gīlās—a corruption of *Kīrās*—كيراس—from the Greek *kerasion.*

A cherry, the fruit of PRUNUS CERASUS, var.; *gīlās* is the term in Persia, in the Kuram Valley, and Kashmir for the sweet white-heart cherry met with in cultivation.

GIN, the cotton gin, *halājī.*

The wood considered the best for the manufacture of these, is that of the wild Pear, PYRUS species; and of the Hawthorn, CRATÆGUS OXYACANTHA.

GINGER—the rhizomes of ZINGIBER OFFICINALE.

Girez—گريز—the end of a beam of wood; *grez, gurez*, the Elm, ULMUS MONTANA, and another species.

Gīshar—probably a corruption for *gīā-shīr*, EUPHORBIA OSYRIDEA.

GLASS—*shīsha.*

Glass is now manufactured at Herat, for which the natives employ the Barilla of the country. Signs of the past manufacture of glass were very prevalent in the Helmand Valley, amongst the debris of the many massive ruins of that country.

GLASS-WORT—CALLIGONUM COMOSUM.

GLUE—

The Persians have two substances almost identical with each other, both are equally commonly used for the same purposes; in speaking generally of either they use a term commonly applied to both. Glue made from the refuse of animal matter, our ordinary glue; and a glue-like gum made from the roots and leaves of an EREMURUS, quite unknown to us. When speaking of either generally they call them *charīsh, chirīsh, chīresh, sares, sires, siris, sirīsh, sirish,* so that to distinguish what substance it is that they are alluding to they find it necessary to add some discriminating word—thus for animal glue, *charīsh-charm,* the glue made from skins of animals, or *charīsh-shōm,* black glue; for the vegetable glue they say *gīā-sares, sarīsh-i-kāhī,* grass or herb glue. In all probability *sīrinj,* "a gum-like substance obtained in Yarkand by boiling the root of a shrub" (*Trade Products of Leh,* p. 246), will prove to be the latter.

Glycyrrhiza glabra, *Linn.* LEGUMINOSÆ.

The liquorice plant, *mahk, māhk, sus, asus, ālsus;* the underground root-stock, *bekh-mahk, bekh-sus;* the extract liquorice, *mahk, rob-asus, asus, ālsus, asal-ālsus, malhatī.*

A characteristic and extremely common shrub in the Badghis and Khorasan, at an altitude of above 2000 feet, and most luxuriant in loamy soil, where there is moisture. In the latter localities the annual shoots grow to four feet, with enormous underground root-stocks. The underground root-stocks are collected by the nomads, from which they prepare the extract liquorice. Those of our camp followers who had been to Kandahar with our army, demonstrated to us what excellent fuel the root-stocks made; ever after the discovery of the profusion of this plant in our encampments, or the vicinity, our men were to be seen daily collecting the roots for fuel.

The extract is not prepared at any of the large towns, but at the places where the nomads encamp, and by them is traded with in the towns, and thus exported to Persia proper and India. This plant, or a variety of it, is indigenous in the Kuram Valley, and might easily be cultivated at Quetta, Kohat, Peshawur, Abottabad, and many other localities on our north-western frontier. A preparation of liquorice made with the whey of Oxygal is called by the Turkomans *āo-karut;* this is employed as a household remedy.

GOAT—

Goats in general, or the female goat in particular, *buz, bōz, baz, bād, burz;* by the Baluchis *heth.* The male goat, or the leader of the flock, *taka,* hence applied to the male Ibex, and to the male Gazelle. *See* Sheep.

GOAT'S FIG—the castor-oil plant, RICINUS COMMUNIS.
GOAT'S HAIR—*pat, kurk, kurg.*
GOAT'S STORE—the galls of PISTACIA VERA.
GOAT'S THORN—ALHAGI CAMELORUM.
Gōgird—گوگرد—sulphur.
Gōgird-i-farangī—[European sulphur]. Lucifer matches.
Gōhar—گوهر—a jewel.
Gōhja, kōhja, kōhcha—the Hawthorn, CRATÆGUS OXYACANTHA.
Gol, gul—گل—a ball, a bulb, a flower.
Gōla—گوله—a ball, a cotton pod, a cocoon, the seed vessel of the poppy.
Gōlī, gulī—گولي—a ball, a bullet, a bulb.
Gōlī-lāle, gōlī-lāla—گولي لاله—[the bulbs of the red (flower)]. The bulbs of TULIPA MONTANA, these are rather nice to eat; they are commonly collected and eaten by the people.
Gōlī-sarnagun—[the bulbs of the topsy-turvy].

The tubers of a plant, the flowers of which, according to the natives, hang upside down, considered rare in Afghanistan, and highly valued as a medicine. From inquiries I believe it to be a Liliaceous plant near FRITILLARIA.

Gōr—گور—a tomb, a grave, the wild ass.
Gōra—گورہ—the wild ass, EQUUS HEMIONUS.
Gōra-khar—گورہ خر—the wild ass.
Gōr-kan—گورکن—[the grave-digger], name applied to the Badger, MELES species.
Gōsāla—گوسالہ—a calf.
Gōsfand, gōspand—گوسپند—a sheep.
Gōsh—گوش—the ear, the external fleshy appendage.
Gōsh-wāra—گوش وارہ—[like the ear].

The name applied to the leaves of PISTACIA TEREBINTHUS, var. MUTICA, from the appearance given to the leaves by the flat, flesh-coloured galls that form round the margin of the leaf.

Gōsht—گوشت—meat.
Gōsht-ruba, gosht-roba—گوشت ربا—[carrier off of meat]. A kite, a crow.

Gossypium herbaceum, *Linn.* MALVACEÆ.

The cultivated cotton plant, *pamba-chōb, pumba-chōb, pamba-chub, pumba-chub, pamba-chu, pakhta-chōb, chōb-i-ghōza, kapās;* the flower, *gul-i-ghōza;* the pod, *gōza, guza, ghōza, ghōja, ghuja, kōza, kōza-pamba, khurāk, kōkalak, umba;* the shell of the pod, *kawa;* the seed, *pamba-dāna, phun-dāna;* the oil, *rōghan-i-tāza;* the oilcake, *kunjāra;* the fibre cotton, *pamba, pumba, pakhta, gōza, kōza, guza, kalak;* the raw thread, *nakh-i-pamba khāmak.*

Cotton is generally cultivated over the whole of this country, but wherever it is grown successfully there must be a free supply of water for its irrigation. The shrub does not average three feet in height; the seed is sown in beds about the middle of May, and the seedlings are planted out in from five to six weeks' time; the cotton is fit for collecting from October on to the middle of winter. Cotton in a raw state is not exported, although we did see a good deal passing up the Helmand Valley, from Persia, at the end of October 1884. It is usually locally converted into thread, or woven into cloth; the thread and fabrics are traded with in the surrounding country. The fibre of the Turkistan cotton is

very much superior to the product of these parts. Animals are fed on the unripe cotton pods; the ripe shells of the pods are employed in the manufacture of gunpowder, and from the seeds an oil is extracted; the refuse of the seeds after the extraction of the oil are used to feed cattle on. The prosperity of any village can be well estimated from the number of cotton-gins, spinning-wheels, and reels for winding silk that are seen exposed on the house-tops.

GOURDS, or Pumpkins, the fruit of LAGENARIA VULGARIS, BENINCASIA CERIFERA, CUCURBITA PEPO—*kadu, thambal, sabcha.*

Gōz—گوز—a nut, a walnut, the fruit of JUGLANS REGIA.

Gōz-i-kanā—گوز کنا—[the hard nut]. The Thorn-apple, DATURA STRAMONIUM.

Gōza—گوزه—*guza, kōza*—the fibre cotton, yielded by the plant GOSSYPIUM HERBACEUM; also the cotton pod; the cocoon of the silk-worm; the capsule of the poppy; the Cardamom fruit; a nut.

GRAFT—a graft, *kalam;* to graft, *pewand-kardan;* grafted, *pewandī.*

The gardener's art of grafting is well known, and all the better class of fruits are raised by grafting, as the Peach, the Pear, the Apricot, the Quince, the Cherry, and the Mulberry.

GRAIN—a grain, a seed, a berry—*chām, dāna, hab.*

Gram—an Anglo-Indian term in the Punjab for the pulse of CICER ARIETINUM; in other parts of India for the pulse of some other plant.

GRAPES—the fruit of VITIS VINIFERA.

GRAPE-BOXES—

These are for the export of fresh grapes to India; they are usually made of the wood of POPULUS NIGRA or of a SALIX; they are circular boxes, about 12 inches across, and from 4 to 5 inches deep.

GRAPE-SUGAR—*kand-a-shīra-ghī.*

Ordinarily only a syrup is obtained from grapes, very like that form of treacle in England that goes by the name of

golden syrup, but I was informed that a sugar also is obtained; and I was given some small loaves, the crystalline particles of which did not correspond with that of ordinary loaf-sugar, and this may have been sugar made from grapes.

GRASS, or grass-like herbs—*ālaf, gīā, gīāgh, ka, kā, khāsh, kīāgh, kirta, kīrtag, sīāl, kāhī;* Turkomani, *tarnak, tar-ganak.*

GRAVE, *gōr.*

GRAVE-DIGGER, *gōr-kan*—a Badger, MELES species.

Grez, gurez—the Elm, ULMUS species; *girez,* the end of a beam of wood.

Gugal—گوگل—the gum-resin of BALSAMODENDRON MUKUL.

Guj—گوز—a button, the Hawthorn.

Guj-i-kōhcha—گوزکوهچه—*guj-i-kōhja*—[the Hawthorn of the hillocks]. The Hawthorn, CRATÆGUS OXYACANTHA.

Gul—گل—*gol*—a flower, a bulb, a ball of clay.

Gul-āb—گلاب—[flower-water]. A rose; the flowers of ROSA DAMASCENA; rose-water.

Gul-i-abās—گل عباس—the flowers of MIRABILIS JALAPA.

Gul-i-dukhtar—گل دختر—[the daughter's flower]. The Poppies, PAPAVER DUBIUM, PAPAVER PAVONINUM, and RŒMERIA species.

Gul-i-gāo-zabān—گل گاوزبان—[the flower of the cow's tongue]. The flowers of CACCINIA GLAUCA and ANCHUSA ITALICA.

Gul-i-ghōza—گل غوزه—[the flowers of the cotton], GOSSYPIUM HERBACEUM.

Gul-i-khatmī—گل خطمي—[the flowers of MALVA] and ALTHÆA species.

Gul-i-kājīra—گل کاجیره—[the flowers of CARTHAMUS TINCTORIUS].

Gul-i-khaira—گل خیره—or *gul-i-kheru*—گل خیرو—[flowers of ALTHÆA species].

Gul-i-nīlī—گل نیلی—[the flower of the Nile, or the blue flower]. The flowers of a rare plant collected on Koh-i-simcha, and used in medicine.

Gul-i-rānān-zebā, or *gul-i-rānā* — گل رعنا —[the beautiful lovely flower], ROSA LUTEA.

Gul-kalura—[the flower (got during) gleaning], ROSA BERBERIFOLIA.

Gul-khale—the flower, GENTIANA OLIVIERI.

Gul-lāl-abāsī—گل لال عباسی—[the red flowers of MIRABILIS JALAPA].

Gul-māī—ANABASIS species, and SALSOLA AURICULA.

Gul-nār—گل نار—[the flower of the Pomegranate], PUNICA GRANATUM.

Gul-nastran—گل نسترن—[the flower of ROSA MOSCHATA].

Gul-pār—an Umbelliferous plant, the fruit of which is also called *anjadān*.

Gul-zalīl, *gul-i-julīl*—[the flowers of (DELPHINUM) ZALIL].

Gul-zard—[yellow flowered], BRASSICA species.

Gulām—Turkomani for the wild Ass, EQUUS HEMIONUS.

Gulām-maidanī—[the plains of the wild Ass].

GUM—*jad*, *gabīna*, *katīra*, *kawaj*, *charīsh*, *sakbīna*, *sares*, *shilim*, *tul*, *samagh*.

Several forms of gum seem to be of valuable commercial importance throughout the country. The highest in importance is that of ASTRAGALUS HERATENSIS, and another species, a kind of Tragacanth called *katīra*, nextly that obtained from the roots and leaves of EREMURUS AUCHERIANUS, by boiling, viz., *gīā-sares* or *charīsh-i-kāhī*, and lastly the gums collected in orchards from the trees of plums, apricots, peaches, and almonds, usually termed *shilim*. I was quite astonished at the quantities of gum I saw being collected in the various gardens from these trees, and the huge balls of it, made up into half-camel loads, that were lying for sale in the bazaars at Meshad, mostly all for exportation to Turkistan.

The seeds of PYRUS CYDONIA, the Quince, yield a gum that is employed by the women and dandies in dressing their hair.

GUM ARABIC—*sakbīna.*
GUM TRAGACANTH—*gabīna, katīra.*
GUM-RESINS.

The gum-resins for which this part of the world is most famous are Asafœtida, Galbanum, and Ammoniacum. These are collected from indigenous plants, and exported through Persia or Afghanistan and India to all parts of the world. Their value would be greatly increased if any trouble were taken, or system adopted, for their collection, improvements being made as regards cleanliness in collecting and exporting devoid of adulteration. I am of the opinion that the plants yielding these might be cultivated with success, both as regards the quality of the drugs produced and as a profitable investment, if an experiment were attempted, in the vicinity of Quetta.

A Mastich is collected, for household use, exuding from the stems of PISTACIA VERA and PISTACIA TEREBINTHUS, var. MUTICA. A kind of Bdellium is obtained in Baluchistan from BALSAMODENDRON MUKUL, called *gugal,* and at Meshad I purchased a highly-scented gum-resin, I myself collecting a similar piece at Sha-Ishmail, to which was given the same names as to an imported Bdellium, viz., *mulk-i-azrak, mukal-i-azrak, bōī-kōhī, buī-kuhī,* probably the gum of a BALSAMODENDRON. RHUS CORIARIA is cultivated for its leaves, it exudes a gum which is called *sumāgh;* this is collected, but in what way employed I know not.

Imported into Meshad through Persia, for further transit *viâ* Afghanistan to Turkistan and India, are Myrrh, the gum-resin of BALSAMODENDRON MYRRHA, *mur, bōl.* Bdellium, yielded also by a species of BALSAMODENDRON, *mulk-i-azrak, mukal-i-azrak, bōī-kōhī, buī-kōhī.* Olibanum or Frankincense, yielded by a species of BOSWELLIA, *ālk, īlk, ālk-ul-labān.* True Mastich from the west, the gum-resin of PISTACIA LENTISCUS, *kandur-i-rumī;* and Lac, the gum-lac of commerce, *lāk,* imported from India and Bokhara.

Gun — گون — *guna* — گونه — colour, species, kinds, sorts.

Gundelia Tournefortii, *Linn.* COMPOSITÆ.

Kangar. This is a large thistle-like shrub, growing in gregarious masses, and covering immense tracts of country. In a general way it much resembles the Artichoke, CYNARA SCOLYMUS, and hence I believe that the latter, a cultivated plant in gardens, has received its name from this. The young leaves and shoots in early spring are eaten as a vegetable, very much in the same way as we use the Cardoon, CYNARA CARDUNCULUS, and is much relished by the Persians. A red dye is said to be obtained from the stems. The whole plant makes excellent fodder, and is largely collected and stacked for winter use, chiefly to feed goats and sheep upon. It is one of those shrubs that in autumn is to be seen being blown hither and thither by the winds across the vast open plains.

GUNPOWDER—*barud.*

Is manufactured for individual or local use by the inhabitants. This is a coarse slowly exploding compound, which is better fitted for the very ordinary weapons of this country than that manufactured in Europe. It is usually made from the charcoal of the shell of the cotton pod, or from that of the wood of a SALIX. Almost every native seems to know how to make gunpowder, and each man has his own special receipt for doing so.

Gur—گر—this is a Hindustani word for solid molasses, which is imported in large quantities from India.

Gurās—ARTEMISIA SCOPARIA.

Gurba—گربه—a cat; *gurba-dala*—a MARTEN or wild cat.

Gur-bālchōr-ak—a trade name for the root-stocks of VALERIANA WALLICHIANA.

I am of opinion that this name is a contraction for *gurba-bālchōr-ak* [the cat VALERIANA]. *Bālchōr* is the root of NARDOSTACHYS JATAMANSI, *bālchōr-ak* is the little *bālchōr*, or VALERIANA; the word *gur*, a contraction for *gurba*, a cat, no doubt applied to the root from the extraordinary effect it produces upon this animal. "A Kabul trader at Leh told

me that it was the same as *gur-bālchōr-ak* in the Peshawur trade, and owing to a load of which he was once nearly driven mad in conveying it from Kabul to Peshawur, by all the cats of the country surrounding him at night, wherever he halted" (*Trade Products of Leh*, p. 13).

Gurda—گردہ—a kidney, anything round, a pillow.

Gurda-ālu—گردہ الو—[the kidney plum], the same as *gurja-ālu*, the fruit of PRUNUS species; a kind of plum.

Gurez, grez—the Elm, ULMUS species; this is probably the same word as *girez*, a part of a beam.

Gurja, gurda—a plum, the fruit of PRUNUS species when in a ripe fresh state, when dried *ālu-bokhāra*; the cherry-tree, PRUNUS CERASUS, is also called *gurja*.

Gypsophila paniculata, *Linn.* CARYOPHYLLEÆ.

The plant, *sāo-safed*; the root-stock, *bekh*. The root-stock of this plant is extensively sold in the bazaars to be employed as soap in the washing of clothes.

GYPSUM—*gach*.

A common mineral product of the country, employed as cement and to give a white polished plaster for the interior of buildings.

Hab—حب—a grain, a seed, a berry, a pill, a pulse.

Hab-ālmalūk—حب الملوک—[cherry-stones], CROTON seeds.

Hab-āl-salātīn—حب السلاطین—[the royal berry]. The seeds of CROTON TIGLIUM.

Hab-dilmaluk—probably for *hab-ālmaluk*. The seeds of CROTON TIGLIUM.

Hab-i-hīl—حب هیل—or *hab-i-hāl*—حب هال—Cardamoms, ELETTARIA CARDAMOMUM.

Hab-i-khīār—حب خیار—the seeds of the Cucumber, CUCUMIS SATIVUS.

HAIR—Goat's hair, *pat*; the cloth, *patu*, *kurk*, and *kurg*. Camel's hair, and the fabric CAMLET, *barak*.

Halājī—(pronounced *alājī*)—حلاجي—a cotton gin.

Hāl—هال—or *hīl*—هيل—the fruit of ELETTARIA CARDAMOMUM.

Halīla—هليله—*halīle*—the fruit of TERMINALIA CHEBULA, Chebulic Myrobalans.

Haloxylon Ammodendron, *Bunge.* CHENOPODIACEÆ.

Called the white Tamarisk by Europeans. *Tā*, *tar*, *tār*, *tā-gaz*, *tārgaz*, *tāgh*, *tākh*, *tāk*, *tugh*; *saxaol* by the Turkomans, and *zak* * by the Mongols. A common tree of no great size, found from the dry sandy deserts of Baluchistan to the valley of the Hari-rud and Khorasan. One tree that I measured at Tomanagha, and with the largest wood of its kind that I had come across, measured at two feet from the ground twelve feet in circumference. They average in height about twelve feet, few ever reach eighteen feet. The wood is very heavy, it is difficult to cut, but makes splendid fuel. From the green wood in Herat the natives prepare a dye, (*rang-i-*)*shākha-i-tāgh*, much employed to give a green colour. The wood is often burnt to yield Barilla, but the plant is held in greatest value for the fodder its fresh shoots yield, especially to camels in the desert tracts, where they can live upon it alone for months without suffering; this is not the case when they have to feed on the TAMARIX.

Hamām—حمام—a place for bathing within a building, the term is usually applied to a Turkish bath.

Hāmun—هامون—a plain, a piece of level ground. On the Helmand it means an expanse of water in which a jungle grows.

Haoma—EPHEDRA PACHYCLADA.

Har—هر—every, all. A noxious grain amongst corn.

Har-bang—هربنگ—[the intoxicating grain]. Darnel grass, LOLIUM TEMULENTUM.

* *London to Bokhara*, by Col. A. Le Messurier, R.E., 1889, p. 133.

HARE—*khar-gōsh*—LEPUS species.

HARICOT BEAN—PHASEOLUS VULGARIS.

Harmal—حرمل—the wild Rue, PEGANUM HARMALA.

Haoz—حوض—

A reservoir for storing water in; it is usually covered over with a domed roof, to keep the water cool in summer, and to prevent its freezing in winter. The water in these tanks is filthy in the extreme, owing to the amount of organic water introduced by the people in taking their daily supply, as well as in carrying out their ablutions over the margin of the reservoir.

HAWTHORN—CRATÆGUS OXYACANTHA.

HAY—*beda, khāsh, ka, kā.*

Is prepared from the cultivated plants TRIGONELLA FŒNUM-GRÆCUM, MEDICAGO SATIVA, and TRIFOLIUM RESUPINATUM; although in some parts of the country grasses are in profusion, no attempt to make hay from them is ever made, whereas the entire shrub GUNDELIA TOURNEFORTII is collected and stored, this after being stored becomes more like the crushed straws of wheat and barley, than our idea of what hay ought to be.

Hechī—the galled fruit of PROSOPIS STEPHANIANA.

HEDGEHOG—ERINACEUS species.

Helianthus tuberosus, *Linn.* COMPOSITÆ.

The Jerusalem-artichoke, the tubers are called *seb-i-zamīnī-angrez.* This is cultivated in gardens both at Herat and Meshad.

Helicophyllum crassifolium, *Engl.* AROIDEÆ.

Phanār. This Aroid was very common in the stony clayey soil round Tirpul. Its deep purple-coloured spathe was extremely handsome.

HEMLOCK—CONIUM MACULATUM.

HERBS, Herbage—*ālaf, samār, gīā, gīāgh.* Turkomani, *tarnak, targanak.*

HERMODACTYL—

The corms of MERENDERA PERSICA are collected and im-

ported into Meshad, called *shambalīt;* these may be one of the forms of the Hermodactyl of the ancients.

Heth—Baluchi for a goat.

Hīl—هیل—or *hāl*—هال—the fruit of ELETTARIA CARDAMOMUM.

Hīl-i-kōza, or *hīl-i-gōza*—هیل گوزه—the skins of the Cardomum fruits.

HILL—*ko, kōh* ; hillock—*kōhcha.*

HILL-CARROTS—ZOZIMIA ABSINTHIFOLIA.

HILL-PEACH—STOCKSIA BRAHUICA and LYCIUM BARBARUM.

Hīma—هیمه—firewood, fuel.

Hinduāna—هندوانه—*hinduānī*—the water-melon, CITRULLUS VULGARIS.

Hīng—هینگ—Hindustani for the gum-resin Asafœtida, FERULA FŒTIDA.

HOLLYHOCK—the flowers of the indigenous ALTHÆA HOHENACKERI and of the cultivated ALTHÆA LAVATERIÆFLORA resemble those of our garden cultivated plants extremely.

HONEY—*asāl, angabīn, anjabīn, mazj;* Kuram Valley, *gabīna, bagīna.*

Was a rare commodity over the most of the country I traversed ; it is said to be imported into Herat from the forest districts, and that bees were common in the forests of the tree Honeysuckle, LONICERA NUMMULARIFOLIA.

HONEY-GRASS—ARISTIDA PLUMOSA.

HONEY-SUCKLE—LONICERA NUMMULARIFOLIA.

HOP—the aggregate fruits of HUMULUS LUPULUS.

Hordeum Caput-Medusæ, *Benth. et Hook. fil.* GRAMINEÆ.

Considered a valuable fodder grass.

Hordeum hexastichum, *Linn.* GRAMINEÆ

Barley, *jao-shīrīn,* or *jow-shīrīn.* This species of barley, with the huskless variety, are alone used as food by the people. As this takes fully four months to ripen, it never

can be grown as a second crop. It is usually considered as too valuable to be ordinarily cut down and given as a green fodder to cattle. The crushed straw after the removal of the grain is stacked as a winter fodder.

Near Maimana the huskless variety is cultivated, called *jao-makaī*, or the barley from Mecca; it is, however, not a very common grain.

Hordeum ithaburense, *Boiss.* GRAMINEÆ.

The barley of the desert. This grass by the nomads is looked upon as wild barley, and goes by the name *jao-dashtī;* it resembles in its habit the growth of barley so closely, that the natives believe it to be so. It is found occurring throughout the Badghis, forming a portion of the vegetation on the rolling downs, usually growing in isolated clumps to a height of nearly three feet, these clumps look as if patches of the country had come under cultivation.

Hordeum vulgare, *Linn.* GRAMINEÆ.

The harsh or bitter barley, *jao-tursh.* This barley is considered too harsh to the taste and too heating for the blood to allow of its being employed in food. It is therefore cultivated solely to be given to cattle; usually the crop is cut green, and this mixed with the crushed straws makes the latter more palatable. All green-cut fodder, whether of wheat or any barley, is ordinarily called *tursh* or *trush*, the name for this barley having spread to any corn cut in a green state. This is one of the few grains that can be looked upon as ever being grown as a second crop, as it ripens in three months; except as a fodder for cattle this barley is always spoken of with great contempt.

HORSE—*asp.*

In Afghanistan the horse is primarily employed for the conveyance of man, and nextly for all field work, such as ploughing, and conveying in the harvest. For carrying heavy loads for long distances camels are employed. At Karaol-khana, Marachak, and Ab-i-goshan in February 1885 we saw numerous pairs of horses ploughing and preparing the land for a wheat crop. For conveying goods in these parts they have a long-bodied stumpy horse, not quite a pony, which is

called a *yābu;* these are excellent animals for riding a sort of jog-trot on long journeys, and it is wonderful what a weight they will carry in addition to the rider. At Kushk we saw several herds of ordinary ponies, which we were told were bred there for sale to traders.

HOUSE—*khāna, dān.*

With scarcely an exception all the houses of this part of the country are built of sun-dried bricks, and the roofs are domed with the same material. This is solely due to the want of fuel for burning bricks, and the absence of timber for the purposes of roofing. To see a house with a flat roof is exceptional, and the natives say that they are always dangerous to live in owing to the havoc that white ants play with any timber that may be employed in the roofing. These domed houses have no windows, only an opening on one side in the top of the roof for the exit of smoke, and a small narrow door. They are very comfortable to live in during winter, but quite unbearable in summer. The houses for cattle are all built of basket work—wattle—dabbed over with clay.

Huka—حقه—the technical term for that portion of the pipe which holds the water through which the smoke is drawn; ordinarily a pipe for smoking tobacco.

Hulu—حلو—the Teheran term for the peach, the fruit of PRUNUS PERSICA; Arabic for sweet, pleasant to the eye or taste.

Hum—هوم—*huma, um, uma*—EPHEDRA PACHYCLADA and other species. The same name is also applied in Baluchistan to PERIPLOCA APHYLLA, where both plants are common.

Hum-i-bandak—[the knotted or jointed EPHEDRA], EPHEDRA FOLIATA.

Humulus Lupulus, *Linn.* URTICACEÆ.

The Hop, grows in enormous quantities in Mazanderan, the Caspian province of Persia, in apparently an indigenous condition. I believe it would flourish if cared for in the Kohistan range and to the east of Herat, also round

Kandahar, certainly in the Kuram Valley in the deep gorges of those high mountains, where there is a sufficiency of moisture without an excess as in Kashmir. The indigenous Hop of Mazanderan even now might be made a very valuable article of commerce from Herat to India, and its cultivation a source of great profit to that country. Round Quetta I feel sure that there are localities where the cultivation of the Hop might be looked forward to with success.

Hyssopus, *species.* LABIATÆ.

A Hyssop, called *zufa.*

Hystrix, *species.*

The Porcupine, *khār-a-kash, khār-a-kosh, khār-pusht, khār-pōsht, khāl-pōsh, shōgle, sīkh-aōl.* A good specimen of this from that country would be valued.

IBEX—CAPRA SIBIRICA. The male *taka,* the female *bōz-i-kōhī* or *burz-i-kōhī.*

Iblīs—ابلیس—the devil.

Ibrān—the extract obtained from the root of BERBERIS species, employed as a dye stuff and medicine.

Ibrang—یبرنگ—root, origin of anything.

ICE—*yakh.*

In Persia ice is collected during winter by spreading out water during the night in a shallow trench, between a couple of high walls; these places where the ice is thus collected are called *chādar-shab* [night-sheet]; in the morning the ice is lifted and stored in pits.

Igir—اگر—the rhizomes of ACORUS CALAMUS.

Ilk—الک—*alk*—علک—a gum-resin as of BOSWELLIA species. The true resin of a Pine or Juniper.

INCENSE—

The following substances are employed in Persia as incense, or are exported to be so employed:—Galbanum, the gum-resin of FERULA GALBANIFLUA; the root of the true Sumbul, FERULA SUMBUL, imported from Central Asia; and as a sub-

stitute, the root of FERULA SUAVEOLENS; the leaves of the tree Juniper, JUNIPERUS EXCELSA, *ārcha, orsa;* the twigs of EPHEDRA PACHYCLADA, *hum;* and a substance called *zuft*, said to be obtained from a cultivated tree.

Indar-latīb, a corruption for *andar-ultīb*, the root-stock of VALERIANA WALLICHIANA.

INDIAN CORN—Maize, ZEA MAYS.

INDIAN HEMP—CANNABIS SATIVA.

INDIGO—the dye stuff obtained from INDIGOFERA TINCTORIA.

Indigofera tinctoria, *Linn.* LEGUMINOSÆ.

Yields the dye stuff Indigo, *nīl*, which is largely imported from India, either overland or by the Persian Gulf.

Ipomæa, *species* (?).

A cultivated Convolvulus is called *nīla-fār*, and the seeds *tukhm-i-gul;* the latter are employed in medicine.

Iris, *species.* IRIDEÆ.

The rhizome of an IRIS is called *ōrisā, ōrisīā*, brought from Bijnort to Meshad, is used as a scent and employed in medicine. *Susan* is a name for either a Lily or an Iris. The Orris root of commerce is derived from several species of Iris; according to Flückiger and Hanbury, that of IRIS FLORENTINA, *Linn.*, being the rarest.

IRON—*āhan, āhun*—is imported very largely through Persia into this district.

IRRIGATION—

The water for irrigating fields, orchards, &c., in the Hari-rud Valley was all got by cutting channels from the river; in Khorasan by underground channels leading from spring heads. These underground channels were called *kārez* or *kharez*. I never saw water being raised from wells for irrigation, nor did I ever see a Persian wheel, or any other mechanism for raising water.

Isbarg, isbarag—the flowers of DELPHINIUM ZALIL.

Isfand—اسفند—the wild Rue, PEGANUM HARMALA.

Ishkam—اشکم—the belly, abdomen.

Ishkhār—اشخار—*khār*—خار—Barilla; an impure carbonate of potash and soda.

Ishkī—اشكي—vinegar, acid, sour.

Ishkīn—the Turkoman term for RHEUM TATARICUM.

Ishkhun—اشخون—a dock, RUMEX species.

Ishlan, ishlun, ishlun-i-bandak—ANABASIS ERIOPODA.

Ishnan—اشنان—Arabic for potash.

Ispaghul—اسپغول—the seed of a PLANTAGO species.

Ispand—اسپند—*ispanthan*, PEGANUM HARMALA.

Isparak—اسپرك—the flowers of DELPHINIUM ZALIL.

Ispārza—the seeds of a species of PLANTAGO employed in medicine.

Isthag—the Baluchi for steel, for striking a light with.

ITALIAN-MILLET — SETARIA ITALICA (PENNISETUM ITALICUM).

Jad—زد—or *jid*—gum, resin, the exudation of a juice from a plant.

JAGDALAK, *jigdalik.*

A pass in Eastern Afghanistan half-way between Jelalabad and Cabul, so named from the ELÆAGNUS, or *jigda*, having once been numerous there.

Jāgī-shāk—[earth roots], the tubers that form on the roots of CARUM BULBOCASTANUM.

Jāiphal—جايپهل—Hindustani for the Nutmeg, the kernal of MYRISTICA FRAGRANS.

Jalīl—DELPHINIUM ZALIL.

Jangal—جنگل—a desert place; a country overrun with wood, or with thickets; a jungle.

Jao, or *jow*—جو—barley, HORDEUM species.

Jao-dāna—جودانه—barley pickles; the term applied to small nodes on a stick, after the removal of the bark.

A shrub in the Badghis celebrated for yielding such sticks; they are much sought after.

Jao-dashtī—[wild barley], HORDEUM ITHABURENSE.

Jao-makaī—جومکي—[Mecca barley]. A form of barley, HORDEUM, that produces huskless grain.

Jao-shīrīn — جوشيرين — [sweet barley], HORDEUM HEXASTICHUM.

Jao-tak-tak—rye, SECALE CEREALE.

Jao-tursh—جوترش—[bitter or harsh tasted barley], HORDEUM VULGARE.

Jaoār—جوار—*jowār*—Hindustani for SORGHUM VULGARE.

Jaohar—جوهر—a jewel, Aniline dyes in crystals.

Jaondar, gaodar—گودر—the wild oat, AVENA FATUA.

Jaor, jaorī, jaoārī, jāoras—

Names equally applied to ZEA MAYS and SORGHUM VULGARE. To distinguish these the former is spoken of as *jaorī-khurdanī*, and the latter as *jaorī-turkomanī*.

Jāo-shīr—جاوشير—the gum-resin Galbanum, yielded by FERULA GALBANIFLUA.

Jaōz, jouz—جوز—a nut; the walnut.

Jaur—a corruption for *zahr*, poison; Baluchi for the Oleander, NERIUM ODORUM.

Jāwars, jāwaras— جاورس —*jāoras*—the greater millet, SORGHUM VULGARE.

JERUSALEM ARTICHOKE—HELIANTHUS TUBEROSUS.

Jhāg—the tubers on the root of SCORZONERA species.

Jidwār—جدوار—*jizwār*, the tubers of Zedoary, CURCUMA ZEDOARIA.

Jigda—the ELÆAGNUS and its fruit.

Jing-jing-bānu, jinjak—the galled pods of PROSOPIS STEPHANIANA.

Jīr, jīr-khār—the barberry, BERBERIS VULGARIS.

Jīra—زيره—Cumin, CUMINUM CYMANUM.

Jīra-shāk, jīrī-shāk—[Carum-roots], the tubers of CARUM BULBOCASTANUM.

Jizwār—Zedoary, the tubers of CURCUMA ZEDOARIA.

Joanī—جواني—CARUM COPTICUM.

Jouz—جوز—a nut; the marrow or centre of anything; a walnut, the fruit of JUGLANS REGIA.

Jouz-i-bōia—جوزبویه—the Nutmeg, the kernel of MYRISTICA FRAGRANS. Also pronounced *jouz-i-bīā.*

Jowain—the fruit of CARUM COPTICUM.

Jowār—Punjabi for SORGHUM VULGARE.

JUDAS TREE—CERCIS SILIQUASTRUM.

Jughal—جغل—*jughāl*, charcoal.

Juglans regia, *Linn.* JUGLANDEÆ.

The Walnut, the fruit of the cultivated tree, *jouz, jaōz, gōz, chār-maghz.* This tree is extensively cultivated at Maimana, from whence most of the walnuts that come to these parts are imported. There are a few trees at Herat, and at Bezd are some large groves of very fine trees, with the orchards full of numerous smaller ones. The tree is said to be indigenous in the Kohistan range; it was so in the Kuram Valley of Afghanistan, where the indigenous tree and its fruits were called *matākh, metākh, whāgar,* the cultivated tree and its fruit having the ordinary Persian names; specimens of the fruit of the indigenous tree were collected and forwarded to the museum at Kew. The *Flora of British India,* by an oversight I suppose, does not include Afghanistan in the extent of the distribution of this tree. The chief value of the cultivated tree lies in its fruit, which, in addition to its being locally consumed, is largely exported to India and Turkistan. Except for medicinal use the oil is not extracted from the nut. The wood is highly valued for the manufacture of the large wooden dishes and platters so commonly in use amongst the people. From the indigenous tree in Kohistan are imported large quantities of the bark for dyeing with, for which purpose the rind of the nuts is also used. The bark, *pōst-i-jouz;* the dye, *rang-i-pōst-i-jouz*; the oil, *rōghan-i-jouz.*

JUICE—*shīra, rob, rōb, rub.*

JUJUBE—*ānāb,* the fruit of ZIZYPHUS VULGARIS.

Juncus maritimus, *Linn.* JUNCACEÆ.

The rush, *chāb.*

JUNGLE, *jungal*—a thicket; a country overrun with wood, reeds, or long grass.

Juniperus excelsa, *Bieb.* CONIFERÆ.

The tree juniper—*ārcha, ors, ōrs, orsa, āoras, ardij.* A large tree, not tall, but massive in bulk; occurring on the ridges and the northern slopes of the Paropamisus range, and in Khorasan, at an altitude of 3000 feet and upwards. The ordinary large specimens measured from 15 to 20 feet in circumference, branching close to the ground, and did not exceed from 20 to 25 feet in height; the lowest branches spreading out almost at right angles, and nearly as large in circumference as the tree itself. Usually the stem of the tree was much larger at the point of throwing off its branches than below it. The wood is employed for beams for roofing, it being considered as proof against the inroads of white ants. At Kala-Naratu there are beams still to the fore, in excellent preservation, which are supposed to have been put up with the building some 200 years ago. The best charcoal for iron and goldsmiths' work is made from this wood, and it is employed in the manufacture of many farm implements, as harrows and such like. The leaves are used as incense in Khorasan.

K—ک. The letter *k* added to a word in Persian gives the diminutive.

Ka—کَ—*kā*—کا—straw, hay, grass, the crushed straw of the various cereals; *bhusa* of Hindustan.

Kabitka—

The houses, huts, or tents of the nomads of Turkistan, made of a wooden frame-work covered with felt. The whole of the woodwork is usually of willow, except the axle on the top of the hut which receives the roof supports; this is, if of hard wood, usually of Mulberry.

Kabuda—کبودہ—the Lombardy Poplar, POPULUS NIGRA.

Kachola—کاچولہ—*kachula*—a term applied to the seeds of STRYCHNOS NUX-VOMICA, and to the shrub and fruit of DATURA STRAMONIUM.

Kachur—كچور—Zedoary, the tubers of CURCUMA ZEDOARIA.

The long tubers are called *nar-kachur*, and the round ones *māda-kachur*.

Kadu—كدو—a pumpkin, a gourd, the fruit of a Cucurbitaceous plant.

Kaf—كف—foam, froth.

Kaf-i-darīā—كف دريا—[The foam of the waters]. Cuttle-bone, the internal calcareous skeleton of SEPIA species.

Kāfila—قافله—a caravan.

Kāhī—كاهي—greenness, grassy.

Kāh-rewa, kāh-ruba—كاهربا—[siezer of straw]. Amber.

Kāh-wan [bush-straw], *kāh-warg, kow-warg, kā-warg* [leaf-straw]. The Caper plant, CAPPARIS SPINOSA.

Kāhu—كاهو—Lettuce, LACTUCA SATIVA.

Kaimāg—Cream.

Kajak—كژك—any kind of hook.

Kajāk—a small, but very troublesome horse-fly, TACHINA species.

Kajāoa—كجاوه—*kadjaoa*—a pannier made of wood, employed with camels, mules, or ponies.

Kājīra—كاجيره—*kājura*—Safflower, CARTHAMUS TINCTORIUS.

Kāk—كاك—anything dried, as meat, biscuit, bread; the dried flesh of melons, CUCUMIS MELO.

Kākrī-lōg—[the Kakar-people]. A nomad tribe of merchants belonging to the vicinity of Herat.

Kākutī—كاكوتي—the herb ZIZIPHORA TENUIOR.

Kalak—كلك—a Cabul term for the fibre of cotton, GOSSYPIUM HERBACEUM.

Kalam, or *kalm*—قلم—a pen, a graft, an annual shoot, a slip.

Kalamī, or *kalmī*—قلمي—pen-like, applied technically

to a crystalline Nitre and Borax. The name for an ERIANTHUS species, from which pens are made.

Kalamfur, for *karanful*—Turkomani for cloves, the flower buds of EUGENIA CARYOPHYLLATA.

Kalampur, *kalanfur*—Turkomani for red-pepper, CAPSICUM species.

Kalaī—قلعي—tin.

Kalān—كلان—great, large, expanded.

Kalāt—كلات—a fort.

Kalkilī—the cup-bearing Ferula, FERULA OOPODA.

Kalpa—the honeysuckle, LONICERA NUMMULARIXFOLIA.

Kalpura—STACHYS TRINERVIS.

Kalur—كلور—gleanings of corn.

Kalura—ROSA BERBERIFOLIA.

Kām—كام—desire, wish.

Kāma—كامه—a fragrant herb; generic term for the Ferulæ.

Kamāī—كماي—a general term for the Ferulæ, and large Umbelliferæ; name of a stinking herb.

Kamān—كمان—a bow, a cotton cleaner.

Kamānī—كماني—bowed, bent.

Kamar—كمر—the loins, the waist.

Kambul—tubers of SCORZONERA species.

Kan—كن—a tree, a place full of trees. To dig, tear out, in composition a digger, as *gōr-kan*, the Badger, or [grave-digger.]

Kān—كان- a mine, a quarry, a shaft, a dry well.

Kanā—كنا—hardness.

Kānī—كاني—a mineral.

Kanāt—كنات—the sides of a tent, or of a *kabitka*.

Kanawez—a country-made cotton cloth.

Kand—كند—*kānd*—كاند—loaf sugar, the testicle, a tuberous root.

Kand-a-shīra-ghī—[sugar from syrup]. Loaf sugar, made from grapes.

Kandal—the gum-resin Ammoniacum, or the plant yielding it. DOREMA AMMONIACUM.

Kandalāsh—كندلاش—*kandal-lāsh* [a putrid carcase]. A stinking kind of herb.

Kandar—(Baluchī) the grass ÆLUROPUS LITTORALIS.

Kandīr—a cloth made of fibre.

Kandur—the grass ERIANTHUS RAVENNÆ.

Kandur—كندر—(Arabic) the gum-resin Olibanum, Frankincense, yielded by BOSWELLIA species. Mastich, the gum-resin of PISTACIA species.

Kandur-i-rumī—كندرومي—*kundar-i-rumī*, the true Mastich, yielded by PISTACIA LENTISCUS.

Kangar—كنگر—the shrub GUNDELIA TOURNEFORTII; the ARTICHOKE, CYNARA SCOLYMUS.

Kangnī—كنگني—Hindustani for SETARIA ITALICA.

Kanjak—كنجك—in these parts is PISTACIA TEREBINTHUS var. MUTICA; is also a name applied to an Elm, ULMUS species.

Kanjīd—كنجيد—*kanjīt*—SESAMUM INDICUM.

Kanoucha—*kanouncha*. The seeds of a Labiate, probably of a SALVIA, employed in medicine.

Kao, kow—Punjabi for OLEA EUROPEA the indigenous Olive.

Kapās—كپاس—the Cotton plant, GOSSYPIUM HERBACEUM.

Kap-o-chīst—the Turnsole, CROZOPHORA TINCTORIA, so called on the Helmand.

Kār—كار—work, labor.

Kār-o-zera—the fruit of a tree said to be cultivated at Meshad and Teheran, employed as a purgative.

Kār—قار—pitch, tar.

Karakulī—

Belonging to a district of Bokhara; the name for a fine kind of kid-skin that comes from that country, the fur of which is highly valued.

Karam—كرم—the Cabbage, BRASSICA OLERACEA.

Karanful—قرنفل—Cloves, the flower-buds of EUGENIA CARYOPHYLLATA.

By the Turkomans corrupted to *kalamfur*, and by them *karanful* is understood to mean red pepper, the fruit of CAPSICUM species.

Karbās—كرباس—in Arabic means fine linen, in these parts a very ordinary country-woven cotton material.

Kardan—كردن—to do, to act.

Kārez—كاريز—and *kharez*—كهريز—an underground conduit for water.

Karmāk—PRUNUS CALYCOSUS.

Karmak—كرمك—a herb with which they wash.

Karmīz—كرمز—[the produce of an insect], COCHINEAL.

Karuna—SOPHORA PACHYCARPA.

Karut—قروت—*kurut*, *māstwā*, *māstāwa*.

Is dried Oxygal, the dried curd from sour buttermilk. Buttermilk is made sour by adding to it some *karut*, or the dregs of some sour buttermilk; it is then placed over the fire until half the liquid has evaporated, and then strained and compressed with the hands, or placed under a weight, until the whole of the whey is pressed out; the whey so removed is called *āo-karut*, and the compressed curd, which is now exposed in pieces to the heat of the sun to be dried, is called *karut*. It is usually to be seen in pieces of an irregular shape, the size of the fist, of a grey brown colour, and of an apparently sandy consistency, covered with finger marks, the impressions left on it in trying to squeeze out the last drops of whey; in consistency it is much harder than any ordinary cheese. Amongst the nomads, and in all households wherever butter is made, there *karut* is largely prepared, and by them traded with throughout the whole country. It is excessively acid, and tastes as if it were made of very acid vinegar. It is largely used in the diet of the people. A piece of it is broken into a basin of milk, and the milk is drunk when it has become sour, which it does in a few minutes; or a small piece is mixed in water, and this acidu-

lated water is drunk with the food; most of the meat stews have *karut* thrown into them to aid in softening the usually tough meat of these parts; or it is eaten as a condiment along with bread, as we do cheese among the very poor. My first experience of *karut* was in the Kuram Valley, where I found the nomads cutting out great slabs of bark from the Deodar trees. The *karut* was placed between two slabs of bark and a large stone on the top to press out the whey. It was a long time before I could find out who cut these slabs of bark out of the trees, disfiguring the splendid trees so dreadfully, or for what purpose the bark could be used. Dried Oxygal, or *karut*, is imported into India from Afghanistan, and is usually considered cheese by Europeans, but that is in all probability because they have never used, or eaten it. Had they ever tried to eat a piece of it the experiment would at once have shown to them how very different it is from cheese. The term dried Oxygal, for *karut*. will be found in Richardson's *Persian Dictionary*, revised by Francis Johnson, 1829, and in my opinion is the correct meaning, for certainly *karut* is not cheese under the ordinary acceptation of that term in Great Britain.

Kās—كاس—a large flat dish or platter.

Kās-i-chob—كاس چوب—a wooden platter, usually made of willow or walnut.

Kash—كش—in composition means drawing, bearing, carrying, as *khār-a-kash*, the bearer of thorns, the Porcupine.

Kashaf—كشف—*kashif*—a tortoise, TESTUDO species.

Kashafa—كشفه—a flat wooden dish.

Kāshghar—كاشغر—*kāshkar*, a variety of LAGENARIA VULGARIS. A town of Central Asia.

Kashnī, kashnīj—كشنيج—*kāsnī, kashnīz*—كشنيز—the Endive, CICHORIUM ENDIVIA, and Chicory, CICHORIUM INTYBUS.

Kashnīz—كشنيز—this is also the name for the fruit of CORIANDRUM SATIVUM, Coriander.

Kashta—كشته—*kishta*—dried fruit; usually applied to the dried flesh of the Apricot, PRUNUS ARMENI-

ACA ; and the same term is applied whether the fruit was dried in a ripe, or unripe state.

Kashta-seb-i-tursh—[dried sour apples], fruit of PYRUS MALUS.

Kashta-shīrīn—the sweet almonds of the Nectarine, variety of PRUNUS PERSICA.

Kāshuk—قاشق—*kāshik*—a spoon.

Kāsnī—كاسني—CICHORIUM ENDIVIA and CICHORIUM INTYBUS.

Kāt-a-gulābī—كات گلابي—Catechu, obtained from ACACIA CATECHU and ARECA CATECHU.

Katān—كتان—*katun*—linen cloth made from the fibre of LINUM USITATISSIMUM ; also applied to the cloth made from the fibre of APOCYNUM VENETUM.

Kātar—قاطر—a mule.

Katīra—كتيره—a kind of gum Tragacanth, obtained from the shrub ASTRAGALUS HERATENSIS and other species.

Kāt-karounja—(Hindustanī)—كات كرنجه—the seeds of CÆSALPINIA BONDUCELLA.

Kawa—كوه—*kuwa*—the shell of the cotton pod, the seed vessel of any plant, the cocoon of the silk-worm, the capsules of cotton employed to make charcoal.

Kawaj—كوج—gum.

Kawar—كور—a place full of rubbish, and deserted by its inhabitants ; or, in other words, where the Caper plant, CAPPARIS SPINOSA is found in luxuriance, a name for the Caper plant.

Kāwarg, kāwar-gīā—كورگيا—[leaf-fodder] *kawark*—كورك—*kawarz*—كورز — *kawarza* — كورزه — the Caper plant, CAPPARIS SPINOSA.

Kawhai—a plant employed in medicine.

Kazb—كزب—the refuse of the seed after expressing the oil, Oil-cake.

Kech, kich, kīch, the shrub ZYGOPHYLLUM ATRIPLICIOIDES.

Kechī—the galled fruit of PROSOPIS STEPHANIANA.

Kema, kāma—كامه—*kamāī*—كماي—the general term for the several large Ferulæ, and Umbelliferæ.

Kema-kōhī, FERULA OVINA.
Kema-i-asp, or *asp-i-kema,* DOREMA GLABRUM.
Angōza-kema, FERULA FŒTIDA.
Bādra-kema, FERULA GALBANIFLUA.
Kāndal-kema, DOREMA AMMONIACUM.
Kema-bīrzad, FERULA GALBANIFLUA.

Kep—the bars of wood that act as levers in bending the poles to the proper curves required for the roof of the *kabitka.*

KERNEL—*maghz, jouz.*

Khadmī, khatmī—the plants ALTHÆA HOHENACKERI, ALTHÆA LAVATERÆFLORA, ALTHÆA OFFICINALIS, and MALVA SYLVESTRIS.

Khāīa—خايه—an egg.

Khāīa-i-īblīs—خايه ابليس—[Devil's-eggs]. The seeds of CÆSALPINIA BONDUCELLA.

Khair—ALTHÆA LAVATERÆFLORA.

Khāk—خاك—earth, soil, mould.

Khāk-shī—خاكشي—*khāk-shīr*—the seeds of SISYMBRIUM SOPHIA, and of some other CRUCIFERÆ employed in medicine.

Khal (Baluchī)—flint.

Khāl-pōsh, a corruption for *khār-pōsh,* [thorny-back]. The Porcupine, HYSTRIX species.

Khāl-pōsht-ak [the small thorny-backed one]. The Hedgehog, ERINACEUS species.

Khām — خام — *khāmak* — خامك — raw, unworked, applied to the thread of cotton, silk, or wool when not finished.

Khāna—خانه—a house, a dwelling, a tent, a place for putting things.

Khanzīr—خنزیر—a pig, Sus scrofa.

Khar—خر—a donkey, the domestic ass.

Khar-ās—خراس—[a mill worked by a donkey], has come to be applied to an oil-mill.

Khar-buz—خربز—*kharbuza*—خربوزه—*kharbuze*—[donkey's snout]. The Melon, the fruit of Cucumis Melo.

Kharez—کهریز—an underground conduit for water.

Khar-gōsh—خرگوش—[donkey-eared]. A hare, Lepus species.

Khar-khushta—[donkey's-delight]. The Colocynth, Citrullus Colocynthis.

Khar-whang-khush—[the shrub sweet to the donkey] Pteropyrum Aucheri.

Kkar-zahra—خرزهره—[donkey's poison]. Nerium odorum, the Oleander.

Khār—خار—a thorn, a prickle, applied to Alhagi camelorum and Prosopis Stephaniana as *the* thorn.

Khār-a-bīa, or *khar-a-bōīa*—خاربویا—[the scented thorn], Psammogeton setifolium.

Khār-a-kash or *khār-a-kosh* [the thorn-bearer]. Porcupine, Hystrix species.

Khār-a-zīr, or *khār-a-zīl*—[the thorn under]. This is the name of Lycium barbarum, but it is equally applicable as far as the meaning goes to Berberis vulgaris, the Barberry.

Khār-i-buz—جاربز—[the goat's thorn], Alhagi camelorum.

Khār-i-jinjak—[the thorny *jinjak*], Prosopis Stephaniana.

Khār-pōsht, *khār-pusht*—خار پشت—[thorny-backed]. The Porcupine, Hystrix species.

Khār-pusht-ak, *khār-pōsht-ak*—[the little thorny-backed one]. The Hedgehog, Erinaceus species.

Khār—خار—*ishkhār*—اشخار—Barilla, a coarse carbonate of potash and soda.

Kharez—کهریز—and *kārez*—کاریز—a conduit for water, the greater part of which is usually under ground.

Kharus—خروس—a cock, the male of the domestic fowl.

Khāsh—خاش—a bundle of hay, the grass ERIANTHUS RAVENNÆ.

Khāshāk—خاشاک—a wand, a stick, chips, leaves.

Khāshk—the grass ERIANTHUS RAVENNÆ.

Khash-khāsh — خشخاش — the seeds of the Opium Poppy, PAPAVER SOMNIFERUM.

Khatmī — خطمي — *khadmī* — the plants ALTHÆA HOHENACKERI, ALTHÆA LAVATERÆFLORA, ALTHÆA OFFICINALIS, and MALVA SYLVESTRIS.

Kheru—ALTHÆA LAVATERÆFLORA.

Khesht, or *khisht* — خشت — *kīsht* — کیشت — a brick, a sweetmeat, curdled milk, anything that has become hardened, Manna.

Khīār—خیار—a Cucumber, CUCUMIS SATIVUS.

Khīr—(Baluchistan), the milky juice of EUPHORBIA CHEIROLEPIS.

Khirs—خرس—a bear—*khirsa*—a red bear, URSUS species.

Khīz, or *khez*—خیز—a spring of water.

Khōbānī, *khubānī*—خوباني—in Persia fried apricots; in the Peshawur trade the dried flesh of apricots as imported into India. In Persia and Afghanistan the term *kashta* is employed to mean the dried flesh of apricots.

Khōl—خول—an enlarged gland.

Khōl-a-kōknār—the seed-vessel of the Opium Poppy, PAPAVER SOMNIFERUM.

Khōra, *khura*—خره—خوره—

A white ant, TERMES species; a disease, a mound, a dome,

a domed covering that is placed over the exposed cut root-stock of the Asafœtida plant to protect it from the sun's heat whilst exuding the gum-resin; fruit stones.

Khōra-gaz—[The mound Tamarix].

TAMARIX ARTICULATA in the valley of the Helmand was usually to be noticed growing on mounds or hillocks, as if the ground between the trees had been washed away, only leaving that immediately surrounding each tree.

Khōra-kema — [the dome (covered) Asafœtida], FERULA FŒTIDA.

Khōrāk, khurāk—خوراک—food; the pods of GOSSYPIUM HERBACEUM, the cotton plant, before they are ripe, given as fodder to cattle.

Khōrd, khurd—خورد—meat, victuals, eating.

Khōrdan, khurdan—خوردن—to eat.

Khōrdanī, khurdanī — خوردني — edible; *jaorī-khurdanī*, Indian Corn, ZEA MAYS.

Khormā, khurmā—خرما—Dates, the fruit of PHŒNIX DACTYLIFERA.

Khōrne, khurne—[edible], as *khurne-kema* [the edible Ferula], so called owing to the rachis of the flowering stem of FERULA FŒTIDA being eaten and considered a delicacy.

Khoresh, koresh—EPHEDRA PACHYCLADA.

Khourī—the local name in Kohistan for Alum.

Khūk—خوک—a pig, SUS SCROFA.

Khul—کحل—dark, black; the black bear, URSUS species.

Khun—خون—Blood.

Khun-jada—خون جده—[blood-gum]. The gum resin, a sort of Mastich, of PISTACIA TEREBINTHUS, var. MUTICA, and of PISTACIA VERA.

Khurd—خورد—little, minute, short; also meat, victuals, eating.

Khurda-farōsh—خرده فروش—[a seller of smallwares], a pedlar, a druggist.

Khush—خوش—good, sweet, nice, happy, pleasant.
Khushta—delight, pleasure.
Khushk—خشک—dry, withered.
Khushk-targ—[the dry shrub]. The name at Koin for EPHEDRA PACHYCLADA, and other species.
Kīāgh—کیاغ—grass, herbs.
Kīāgh-dāna-dār—کیاغ دانه دار—[the grain-bearing grass]. The wild Oat, AVENA FATUA.
Kīāk—Darnel-grass, LOLIUM TEMULENTUM, also POLYPOGON LITTORALE.
Kīch, kech—ZYGOPHYLLUM ATRIPLICIOIDES.
Kilkī, kalkilī—the cup-bearing FERULA, FERULA OOPODA.
Kīmāk—کیماک—*kaimāg*—cream.
Kinjad, kinjada—کنجده—*khunjada*—خونجده—[blood-gum]. A gum employed in dressing wounds, the Mastich of PISTACIA VERA, and of PISTACIA TEREBINTHUS, var. MUTICA.
Kinjak—کنجک—the tree PISTACIA TEREBINTHUS, var. MUTICA.
Kīōs—کیوس—curved, a crooked stick.
Kīōs-a-gī—[bent-grass]. The greater Millet, SORGHUM VULGARE. This is certainly the best name as yet for this Millet, seeing it is an introduced plant.
Kīrās—کیراس—

This is an Arabic name for the sweet white-heart cherry, from the Greek; hence comes the Persian term, carried through Afghanistan on to Kashmir *gīlās*, PRUNUS CERASUS, var.

Kirī—A general term for the TAMARIX, in Baluchistan, and on the Helmand.
Kirm—کرم—a worm, a caterpillar.
Kirm-pela—کرم پیله—the caterpillar of the silk-worm moth.
Kirta—کرته—the grass ERIANTHUS RAVENNÆ; the bog-rush; a shrub brooms are made of.

Kīrtag, kīrthag—the grass ERAGROSTIS CYNOSUROIDES.

Kīsa, kesa—كيسه—*kīse*—a purse, a pocket; applied to the enormous, soft, hollow, flabby galls of the Elm, ULMUS species.

Kishmish—كشمش—raisins, the dried fruit of VITIS VINIFERA. There are two well-marked kinds in the trade identified by their colour, the red *surkh*, and the green *sabz*.

Kishnīj—كشنيج—CICHORIUM ENDIVIA and CICHORIUM INTYBUS; a blue flower.

Kīsht—كيشت—Sweet milk curdled, the curds of milk, a brick, anything hard, Manna.

Koār—كوار—*koāra*—كواره—a basket.

Ko—كه—*kōh*—كوه—a hill, a mountain.

Kōha—كوهه—a hillock, a knoll; the Hawthorn, CRATÆGUS OXYACANTHA.

Kohar-barar—the shrub and nodes of EREMOSTACHYS LABIOSA, and EREMOSTACHYS REGALIANA.

Kōhcha—كوهچه—*kōhja*—a hill, a hillock; the Hawthorn, CRATÆGUS OXYACANTHA.

Kōh-tōr—[the beloved of the mountain], the hill peach, the Baluchistan and Helmand name for STOCKSIA BRAHUICA and LYCIUM BARBARUM.

Kōkalak—كوكلك—the pod which contains the cotton before it is ripe.

Kōkh—كوخ—a house without a window, a small hut of reeds.

Kōkh-i-pela—the cocoon of the silk-worm.

Kōknār—كوكنار—the Opium Poppy, PAPAVER SOMNIFERUM.

Kōlak—كولك—a dish in which women keep their cotton that is prepared ready for spinning.

Kōm, kum—كم—*kōn*—the shrub ASTRAGALUS HERATENSIS, and another species, that yield a form of gum TRAGACANTH.

Kōnda—fuel; more correctly fuel consisting of dry cow-dung.

Kōr—كور—blind.

Kōr-mār—كورمار—[blind-snake]. Applied to the Lizard, OPHISAURUS APUS, and to others.

Kōresh—EPHEDRA PACHYCLADA.

Kors—قرص—a round ball of paste, or medicine; the sun's orb; the moon at full.

Kors-i-gurba, or *kos-i-gurba*—[cat-nuts]. Tubers of CARUM species.

Kors-i-kamar—[nuts for the loins]. The great orbicular seeds of ENTADA species.

Kow-warg—the Caper plant, CAPPARIS SPINOSA.

Kōza—كوزه—*gōza*—cotton as collected from the shrub.

Kōza-panba—كوزه پنبه—or *kōza-pamba*—cotton-pods, the pods of GOSSYPIUM HERBACEUM.

Kulcha—the roasted grain of CICER ARIETINUM, carried by travellers as food on their journeys.

Kulfa, *kalpa*—the Honeysuckle, LONICERA NUMMULARIFOLIA.

Kundār—Turki for the shrub APOCYNUM VENETUM.

Kundar—كندر—*kandur*—Mastich, or the gum-resins of the PISTACIAS.

Kundar-i-rumī, *kandur-i-rumī* — [Mastich from Turkey] true Mastich, imported from the West, yielded by PISTACIA LENTISCUS.

Kundarud—كندرود—Mastich, of PISTACIA LENTISCUS.

Kunderu—كندرو—in all probability a contraction and corruption for *khun-dārū*—خون دارو—[remedy for bleeding]. The Mastich, or gum-resin of PISTACIA VERA, and PISTACIA TEREBINTHUS, var. MUTICA.

Kunhalk—SMYRNIUM CORDIFOLIUM.

Kunjad, *kunjada*—كنجده—and *khun-jādā*—خونجده—[resin, for bleeding]. A gum-resin, a Mastich, the trees PISTACIA VERA, and PISTACIA TEREBINTHUS, var. MUTICA.

Kunjāra—كنجارہ—the oil-cake, from cotton seed.

Kunjid — كنجد — *kunjit* — the Sesamum plant, SESAMUM INDICUM, and its seed.

Kurg—كرگ—*kurk*—the fine hairs of the goat's fleece combed out from the coarser hairs; and a fabric made of it.

Kurut — قروت — *karut* — the dried curd of sour butter-milk, dried Oxygal.

Kuschakewiczia turkestanica, *Regal et Smirnow.* BORAGINEÆ.

Bajindāk.

Kuwa—كوہ—*kawa*—the shell of the cotton pod, the seed-vessel of any plant, the cocoon of the silk-worm.

Laban—لبن—(Arabic) drinking; milk, gum, or any juice that exudes from a tree; *liban*, a brick, a tile.

Labān—لبان—*lubān* (Arabic). The breast, bosom, milk, Frankincense, Olibanum.

Labiatæ.

Bād-ranj-bōīa, or *bād-rang-bōīa* [the scented (remedy) for flatulent colic], the seeds of a labiate employed in medicine; *sātar*, a labiate strongly scented of Peppermint, employed in medicine; *ustakadus*, a labiate employed medicinally.

Lab-labu—لبلبو—*labu*—Beet, the root and herb of BETA VULGARIS.

Labu—an OROBANCHE, collected for fodder in Baluchistan is so called, also a BALANOPHORA.

LAC—Gum-lac, *lāk.*

Lāch—لاچ—a deception, a trick, a jest.

Lāch-pusht—may be for *lāk-pusht*, [hard-backed one]. The Tortoise, TESTUDO species.

Lactuca sativa, *Linn.* COMPOSITÆ.

The cultivated Lettuce, *kāhu*; commonly cultivated in gardens, much eaten as a pot-herb.

Lagenaria vulgaris, *Seringe.* CUCURBITACEÆ.

The bottle gourd; this is commonly cultivated to be used as a vegetable. The larger fruits are employed to be made into water-holders *chilimī*, for the *huka*, and the smaller *nashwārī* are converted into bottles for holding snuff. The finest specimens of the last are said to be brought from Samarkand. A well-known variety comes from Central Asia, hence its name *kāshghar, kāshkar.*

Lahsan — لهسن — (Hindustanī) Garlic, ALLIUM SATIVUM.

Lājward—لاجورد—Lapis-lazuli.

Lak—لک—*lāk*—لاک—Lac, gum-lac, sealing-wax.

Lākh—لاخ—hard, a rock, a stone.

Lāk-pusht— لاک پشت —[hard-backed]. A Tortoise, TESTUDO species.

Lāl—لعل—a gem, a ruby, blood, red.

Lāla—لعله—a tulip, a poppy. By the Afghans the name for the Poppy only.

Lāla-dukhtar, lāla-dakhtar — لاله دختر — [the red daughter].

The poppies, PAPAVER DUBIUM, PAPAVER PAVONINUM, also RŒMERIA RHŒDIFLORA. These are greatly admired by the Afghans and Persians, with TULIPA MONTANA, for their bright-coloured flowers, which are certainly most attractive, in early spring, spread in great masses all over the plains.

Lāle—لالي—the Tulip, TULIPA MONTANA; the bulbs, *gōlī-lāle.* The Afghans were very particular in the pronunciation of the words *lāla*, a poppy, and *lāle*, a tulip.

Landār—CODONOCEPHALUM PEACOCKIANUM.

Lang—لنگ—Lame, maimed, paralytic; *ling*, the leg, the lower limb from the thigh downwards.

Lang-ash — [producing paralysis]. Darnel-grass, LOLIUM TEMULENTUM. A kind of pea, though LATHYRUS SATIVUS was not so called.

LAPIS-LAZULI—*lājward.*

Lārag—a species of ANABASIS.
LARKSPUR (yellow)—DELPHINIUM ZALIL.
Lāsh—لاش—a dead body, a corpse.
Lasī—لسي—Hindustani for butter-milk.
Latīb, ültīb, āltīb—musk-scented.

Lathyrus sativus, *Linn.* LEGUMINOSÆ.

The chickling vetch, *ādas* (?). Cultivated in fields above 3000 feet altitude, and not uncommon as a field weed at similar altitudes. It is said not to be injurious as a diet, but at the same time there seemed to be a general idea that some pea *langash* was injurious.

Latīm—لطيم—Musk, or any odour with which temples are perfumed.
LEAD—*surb*—is said to be collected at a place called Robinj, in the hills to the north of Kala-nao; white-lead — *murda-sang;* red-lead — *sīndur, sundur.*
LEAF—*barg, barag, warg, warag, wark, warak, balag, balak.*

Lens esculenta, *Mœnch.* LEGUMINOSÆ. (ERVUM LENS, *Linn.*)

The Lentil, *ādas, āda.* Is cultivated as a field crop at an altitude above 3000 feet, usually without irrigation, but then its success depends greatly upon the fall of dew.

Lepidium Draba, *Linn.* CRUCIFERÆ.

Hoary-cress, *bajindāk, bijindāk,* extremely common amongst corn, collected largely as a pot-herb.

Lepus tibetanus, *Waterhouse.* The Hare, *khargōsh.*
LETTUCE—LACTUCA SATIVA.
LIME—the fruit of CITRUS MEDICA, var.
LIME—*āhak,* made from limestone—*sang-āhak.*

At the north base of Mount Do Shakh, on the 5th August, I saw several lime-kilns. The ordinary mountain limestone was not being employed to make the lime from, although this range consists almost entirely of that formation, but it was

being made from tufaceous limestone, of which there was any quantity in the stream-beds. This is the locality where all the lime required for Herat is obtained; as in addition to the presence of the tufaceous limestone there is an abundance of fuel for burning it.

Līmon—ليمون—the Lime, CITRUS MEDICA, var.

LINEN—the fabric made from the fibre of LINUM USITATISSIMUM.

Ling—لنگ—the lower limb, the leg from the thigh downwards.

Linum usitatissimum, *Linn.* LINEÆ.

Flax. The plant and seed, *zagher;* the fibre and cloth linen, *katan, katān, katun;* the oil of the seed, *rōghan-i-zagher.* This plant is not cultivated in any part of the country I traversed. It is cultivated in Turkistan for its seed for oil. The seeds are largely eaten in sweetmeats, and the oil employed both as a burning oil and in diet. The fibre is not collected. Much linen material is said to be imported from Russian territory.

LIQUORICE—the extract prepared from GLYCYRRHIZA GLABRA.

LITTLE—small, minute; *khurd, āj, chaka,* and the syllables *ak* and *cha* added to a word give the diminutive.

LIZARD—*sag-mār, kōr-mār.*

Lōbīa, lubīa—لوبيا—the French kidney, or haricot-bean, PHASEOLUS VULGARIS; under the name *lubia* may be looked for the bean of DOLICHOS LUBIA, also a cultivated plant.

Lōg—لوگ—(Hindustani) people, a race.

Lolium temulentum, *Linn.* GRAMINEÆ.

Darnel-grass. Scotch, Doits (imbecile); *kīāk, langash, mastakī, musung-dewāna, tak, harbang, zīwān.* A very common grass in wheat fields, the seed of which, when in quantity amongst wheat, is well known, as seen by the meanings to the above native names, to be productive of dizziness, stupor, inebriety, and vomiting. The flour of the wheat grown

in the vicinity of Herat has the character of producing these ill-effects, from the great prevalence of this weed in the fields. When encamped at Tirpul, in May 1885, we had several cases of this poisoning amongst our camp followers. The best treatment to pursue under the circumstances is to relieve the stomach of all the food by a good hot-water emetic, and then clean the intestines by a larger dose of castor oil. In most of the cases vomiting always came on naturally. As far as I can judge, the poison only seems to affect some people. I treated several cases of the same poisoning in the Kuram Valley.

Lonicera nummularifolia, *Jaub. et Spach.* CAPRIFOLIACEÆ.

The Honeysuckle, *kalpa, kulfa;* the fruit, *dāna-chaka.* A common shrub in all the hilly districts, at an altitude above 3000 feet; in certain localities it forms forests on the mountain sides, and slopes that are free of rocks. The trees are few and distant from each other, like the trees in an English park; they do not average much above 20 feet in height, and the boll of the largest I measured was 5 feet in circumference at 6 feet from the ground. Considering the plant is usually a shrub, I believe such a tree as that I measured must have been of a very great age. The wood is highly valued for the manufacture of gun-rests *pāe,* being very light, and yet elastic and tough. The points of these rests are often mounted with the points of the horns of the Gazelle, or with steel. The timber seems to run hollow, as bees are said to commonly hive in this tree. Children are very fond of eating the berries.

LUBIA-BEAN—the bean of PHASEOLUS VULGARIS in these parts, and of DOLICHOS LUBIA in Egypt.

Lubia—لوبيا—the French or Haricot Bean, PHASEOLUS VULGARIS.

LUCERNE—Medick, MEDICAGO SATIVA.

Luf—a cloth made from the fibre of a plant in Yarkand, probably the fibre of APOCYNUM VENETUM.

LUFFA ACUTANGULA, *Roxb.* CUCURBITACEÆ.

The plant, *turī;* the seeds, *tukhm-i-turī.* Commonly culti-

vated in gardens for the fruit, which is used as a vegetable. The kernels of the seeds are ground into a flour, and eaten as a relish with oil; the seeds are given entire as a purgative.

Lukh—لوخ—the Bulrush, TYPHA ANGUSTATA.

Luling—on the Helmand, a name for ARTEMISIA SCOPARIA.

Lutra, species.

The Otter—*sag-ābī*—is said to exist in the Hari-rud, and in the Bala-morghab rivers; this requires confirmation.

Lycium barbarum, *Linn.* SOLANACEÆ.

Khār-a-zīl, khār-a-zīr; in Baluchistan, *kōh-tōr*; the fruit, *zīl.* A large trailing shrub, remarkable in early spring for the brilliancy of its young grass-green foliage, which it loses in early autumn, and then the shrub is seen to be covered with spines, and its general colouring is an ugly grey; but at this time, if laden with berries, which is often the case, the bright scarlet of its berries causes it to become an object of attraction in the landscape, causing it to vie with STOCKSIA BRAHUICA, as to which shall be applied the name *kōh-tor*, [the beloved of the mountain] the hill peach. Children eat the fruit, and apparently relish it. At the encampment of Zaru we lost fifteen camels and a goat, said to have been poisoned from eating the berries of this bush; their deaths must have been due to some other cause, as I subsequently frequently saw camels and goats browsing on this shrub, and eating the fruit without any after bad effects.

Mā—ماه—the moon.

MACE—the aril of the Nutmeg, MYRISTICA FRAGRANS.

Mach, māch—the Baluchi name for the date palm, PHŒNIX DACTILIFERA.

Māda—ماده—the female.

Māda-kachur—ماده کچور—*māda-kachul*, the round tubers of CURCUMA ZEDOARIA.

MADDER—the plant and dye stuff of RUBIA TINCTORUM.

Maghz—مغز—the brain, fat, marrow, kernel, pith;

chār-maghz, the walnut; *tut-i-maghz*, dried mulberries.

Maghz-i-jouz—the kernel of the walnut, JUGLANS REGIA.

Maghz-i-pista—Pistacio kernels, the kernels of PISTACIA VERA.

MAGNESIAN-LIMESTONE—Gypsum, *gach*.

Mahk—مهک—*māhk*, a root; the plant GLYCYRRHIZA GLABRA, its roots; also the extract prepared from its roots, Liquorice.

Māhk-ak—[the small root]. The root stocks of VALERIANA WALLICHIANA. A Kuram Valley name, where this Valerian root is collected for exportation to Cabul.

Māia—مایه—Ferment, Leaven, Rennet; *panīr-māia*, [cheese-producer] Rennet; *gul-māī* [the flower that produces (Barilla)] a species of SALSOLA, and ANABASIS.

Māia-mesh—[sheep-leaven]. The plant CENTAUREA MOSCHATA.

Māia-shīr—مایه‌شیر—[milk-leaven]. A mixture of sour milk and herbs to coagulate milk with.

Maidān—میدان—a plain, a desert.

MAIZE. Indian corn, ZEA MAYS.

Majīt, *majīth*—مجیته—(Hindustanī) RUBIA TINCTORUM, Madder.

Majnu, *majnun*—مجنون—a willow, SALIX species, cultivated at Herat.

Māju—ماجو—*māzu*—مازو—the galls of an Oak, QUERCUS species, or of a Tamarisk, TAMARIX species.

Majun—معجون—an intoxicant prepared from the oil of CANNABIS SATIVA. Indian hemp.

Makaī—مکي—*mekaī*. Of, or belonging to Mecca.

Malhatī—ملهتي—Liquorice, the extract prepared from the roots of GLYCYRRHIZA GLABRA.

MALLOW—MALVA SYLVESTRIS.

Malmal, for *marmar*—Marble.

Malourī—the Bramble, RUBUS species.

Maluk—a sort of candle, or taper.

Malva sylvestris, *Linn.* MALVACEÆ.

The Mallow *khatmī*, *khadmī*, the flowers *gul-i-khatmī*. Employed in medicine, for which the flowers are collected and exported.

Manakī—منقي—*manaka*, Raisins when dried of a red colour, and possessing usually a fine bloom; these contain stones, and resemble our ordinary raisins.

Mandalāk—SCORZONERA species.

Mandāo—the plant ERUCA SATIVA.

Manjīth—منجيثه—*majīth*, Madder, the dye-stuff and shrub RUBIA TINCTORUM.

MANNA—

Several shrubs yield a sweet exudation, which is treated either as a condiment or drug. The product yielded by the plant COTONEASTER NUMMULARIA, *sīa-chob*, is called in these districts *shīr-khisht*, *shīr-khesht*, and *gap-chīr*, or *gap-shīr*. That yielded by ALHAGI CAMELORUM, *shutar-khār*, is called *tar-anjabīn*, or *tar-angabīn*. I also collected from the leaves of SALSOLA FŒTIDA a manna, which was well known to the camel men in Baluchistan, and by them called *shakar*. In Khairan, is said to be collected from a variety of TAMARIX GALLICA, a manna called *gaz-shakar* and *gaz-angabīn*; this in certain seasons is to to be had in great abundance.

These mannas, viz. of COTONEASTER, ALHAGI, and TAMARIX are eaten by the natives as we do sugar or jam with our food, and usually are not treated in the light of medicines. They are largely exported in all directions, and by the natives of India and Europeans are looked upon as drugs.

MANURE—see dung, cattle, fuel, pitch.

Māo—the name amongst the Khyber Afridis for EPHEDRA PACHYCLADA.

MAPLE, ACER species.

Mār—مار—a snake, sick, unwell.

MARBLE—*sang-i-marmar.*

March—مرچ—pepper; black pepper, PIPER NIGRUM.

March-i-surkh — مرچ سرخ — [red pepper], CAPSICUM species.

Marg—مرگ—death.

Marg-ī-mush—مرگ موش—[the lamentation of death]. White Arsenic.

Margh—مرغ—a pleasant grassy spot; plateaux covered with grasses and flowering herbs.

Marmar—مرمر—(supposed to be derived from the Latin, *marmor*) Marble.

Marmar-i-safed—مرمر سفید—Alabaster.

Mār-pech—مار پیچ—twisting round, as a climber round a tree, or as a snake twists about; when applied to CYNANCHUM ACUTUM it means the poisonous climber, or the climber (that causes) sickness.

MARTEN, MUSTELA species; *dala*, *gurba-dala.*

MARVEL OF PERU, MIRABILIS JALAPA.

Māsh—ماش—the cultivated field pea, PISUM SATIVUM. The same name is sometimes applied to some of the Vicias.

Mashing, mushing—مشنگ—VICIA ERVILIA.

Mashk—مشک—*mashak*—a prepared leather bag for holding water, or for churning milk in.

Maska—مسکه—butter; this is the usual name in these parts for butter.

Mās or *māst*—ماست—sour coagulated milk, or sour butter-milk, oxygal.

Māstāwa—ماستاوه—*māstwā*—ماستوا—sour butter-milk coagulated, strained, and the curd dried; this is dried Oxygal.

Mast—مست—drunk, intoxicated, hurtful.

Mast-akī—[slightly intoxicating]. The Darnel-grass, LOLIUM TEMULENTUM.

Mastakā-i-rumī — مصطکارومي — [Turkish Mastich], yielded by PISTACIA LENTISCUS.

Matākh, metākh—the indigenous walnut tree, JUGLANS REGIA, and its fruit in the Kuram Valley is so called. Raverty, in his *Pashtu Dictionary*, gives "*mattāka'h*—متاکه—as a kind of walnut with a hard skin."

MASTICH—the true Mastich is yielded by PISTACIA LENTISCUS ; forms of Mastich by other species of PISTACIA and RHUS. See gum-resins.

Mazj—مزج—Honey. The Baluchistan name for the grass ARISTIDA PLUMOSA ; and for fodder.

Māzu—مازو—*māju*—the galls of an oak, QUERCUS species, or of a Tamarisk, TAMARIX species.

MECCA—مکه—the holy city of the Arabs.

Medicago sativa, *Linn.* LEGUMINOSÆ.

Lucerne, Medick, *sebist, sepist, sipist, tebit ;* the hay, *beda.* Cultivated in every orchard or garden, as a fodder chiefly for horses, and may be found in a state fit for cutting almost the whole year round. In a green state during winter it is cut up and mixed with the dry fodders of the country to make these more nutritive and more acceptable to the cattle. It appears to be an indigenous plant throughout the Badghis, found in extensive patches wherever there is permanent moisture and good soil.

MEDICINE—*dāru, dawā, ādwīa,* or *ādwīat,* (plural of *dawā*).

MEDICK—the clover, MEDICAGO SATIVA.

Megūn—میگون—*megān*—wine or ruby coloured.

Mekaī—مکي—or *makaī*—of or belonging to Mecca. The huskless variety of Barley, HORDEUM HEXASTICHUM, var., and Senna, CASSIA OBOVATA, are so called, as it is supposed that these originally came from that locality.

Mekh—میخ—a nail.

Mekh-ak—میخک—a small nail, a clove, the flower bud of EUGENIA CARYOPHYLLATA.

Meles species. The Badger, *gōrkan.*

MELON—the fruit of CUCUMIS MELO.

MERCURY—*sīmāb.*

Merendera persica, *Boiss.* LILIACEÆ.

The corms, which may be one of the forms of the HERMODACTYLUS of the ancients. *Shambalīt, shānbalīt, surinjān.* This plant is very common all over the Badghis and Khorasan; the corms are largely collected and exported from Meshad to be employed in medicine, through Persia to India, *via* the Persian Gulf. It occurs in abundance on the Shutargardan Pass in the Kuram district, and extends as far south as the Salt-range in the Punjab, and east to Gugarkhan, in the form of MERENDERA AITCHISONI, *Hook. fil.* It was collected on the encamping ground at Gugarkhan in the Punjab by General F. Stubbs, R.A., and subsequently at the same place by myself; this, I suppose, is its most southern and eastern limit.

Mesh—میش—a sheep.

MESHAD—the holy city of the Persians; *Mash-had* —مشهد—a burying-place, especially for those who have been killed fighting for their religion.

METALS, and their salts; see arsenic, copper, gold, iron, lead, silver, zinc, tin.

Meth—Baluchi for a sheep.

MICA—*ābrak, talk.* Is imported as a medicine, and also to be crushed and employed as a facing to plaster of Paris.

Microrhynchus spinosus, *Benth. et Hooker.* COMPOSITÆ.

The plant, *charkha, chīrkha, sīā-kā;* the glue-like gum, *shilim-i-chīrkha.* This is a very common shrub, yielding a gelatinous strongly-scented glue-like substance. It appears at first as a milky juice exuding from different parts of the stem and branches, which as it dries resembles little chips of glue, and which when fresh gives forth a most nauseating odour like that of decomposed meat. It is collected and employed to adulterate the true *anzarut,* or the SARCOCOLLA drug.

MILK—*shīr;* Arabic, *laban, labān, lubān;* see cream, curdled-milk, cheese, whey, butter, butter-milk, oxygal.

MILK-HERB, or any plant that exudes a milky juice, *ashar, ashīr, gīā-shīr, shīr-ag, shīr-gīā, shīr-go.*

MILL—flour-mill, *āsīā;* hand-mill, *dast-āsīā;* donkey-mill, *khar-ās* (oil-mill); water-mill, *āb-āsīā;* wind-mill, *āsīā-bād;* mill-stone, *sang-i-āsīā.*

MILLET—the great, or greater Millet, SORGHUM VULGARE. The spiked Millet, PENNISETUM SPICATUM; Italian Millet, SETARIA ITALICA; Common Millet, PANICUM MILIACEUM.

MINERALS—*kānī.* See SALTS; see METALS; see ALABASTER, CLAY, GYPSUM, FLINT, LIMESTONE, LAPIS-LAZULI, MARBLE, MICA, SANDSTONE.

MINERAL PITCH, or Oil—*mumīāī, momlāī*—a natural production obtained from the Kohistan range.

Mirabilis Jalapa, *Linn.* NYCTAGINEÆ.

The Marvel of Peru. The plant, *abās;* the flowers, *gul-lāl-abāsī, gul-i-abās;* the root, *bekh-i-gul-i-abās, resha-i-gul.* An extremely common flower cultivated in all gardens, much admired for the rose colour of its flowers; the roots, leaves, and seeds are employed in medicine. The rose-red colour of the flowers, *abāsī* (*rang*).

Mis—مس—copper.

Misar—مصر—Egypt.

Misrī, misarī—مصري—Egyptian.

Applied to certain products that are supposed to come from Egypt; as, for instance, *sālab-misrī,* the tubers of an Orchis (*sālab*) that are imported from Egypt. In India the term *misrī* is correctly applied to a sugar-candy which originally was imported into Bombay from Egypt, and I believe the Parsees still import it from thence. Amongst Europeans, sugar that is not candied often goes by the name *misrī,* and the meaning attached to the name now is sugar, and sweetness, rather than that it is the produce of a certain country from whence it has been imported.

Molasses (solid), *sīa-kand; gur* (Hind). Is very largely imported from India and Southern Persia.

Mōm, for *mum*—bees-wax.

Mōmlāī, a corruption of *mumīāī*, a natural pitch.

Morus alba, *Linn.* Urticaceæ.

The Mulberry, *tut;* often pronounced *tuth.* A universally cultivated tree found in all gardens, orchards, and in the vicinity of dwellings; it is cultivated, in the first place, for its leaves for feeding silkworms upon; secondly, for the shade and protection it gives to an orchard generally; and lastly, its fruit comes in for use. It is a common and apparently indigenous tree throughout the Badghis and Khorasan, at an altitude of 3000 feet, in a rocky limestone country in the vicinity of streams. The fruit of the indigenous tree is usually white, of the cultivated tree black, but of the latter I have seen trees having some of the branches bearing white fruit, whereas the fruit on the rest of the tree was black. In the Tirband range a Mulberry is a common, well-known, indigenous tree, but I have no authority as regards the species, but in all probability it is *Morus alba.* From the hill of Malikdan, near Galicha, in Baluchistan, I got specimens of an indigenous Mulberry.

The commencement of all orchards seems to be a low wall, of some 4 feet in height, enclosing a space of ground capable of being irrigated. On the inner side of this wall is planted out a row of ungrafted mulberry trees, and for the first year or two the enclosed space is grown with Lucerne, Barley, and a few vegetables. As the trees grow up, and begin to give shelter and shade, the rest of the ground is planted out with fruit trees, such as Apricots, Plums, and Elæagnus, which usually are the earlier ones to be introduced into an orchard. As long as the mulberries are young, they are valued for feeding silkworms on, with their leaves; as they get old they are not considered good for this purpose, and other young trees are successively reared, the older trees becoming more valuable for the greater amount of shelter and shade they give the orchards.

The fruit of these ungrafted trees is not considered worth

eating in a fresh state, but it is collected in immense quantities to be dried. The dried fruit, *tut-i-maghz*, is met with in every household, for eating as a relish with their ordinary bread diet, or it is made into flour, *talkhan*, to be mixed with corn-flour and baked into bread, or the dried fruit is allowed to steep in water for a night; this infusion, called *shīr-a-tut*, is drunk as an accompaniment with food. From what I have seen of the collecting and drying of mulberries in Afghanistan I certainly would refrain under any circumstances from partaking of them. These are exported in some quantity to India. The fruit of the grafted varieties is only eaten fresh, and is occasionally to be seen for sale in the Bazaars.

At Karobagh there was a circle of very fine old Mulberry trees, varying from 12 to 16 feet in circumference, but much stunted and gnarled in their growth; the largest trees of the sort, however, that I met with in my travels were at Bezd, in Khorasan, where there were many of a very great age. The timber is much valued for building purposes, the wood for fuel, and the darker pieces of the wood, the colour of which is deepened by burying in the ground for a time, for the manufacture of combs; this darkened wood is employed as a substitute for Ebony.

Morus nigra, *Linn.* URTICACEÆ.

The Black Mulberry, *shā-tut.* I met with an occasional tree of this in orchards, cultivated by grafts for its fruit; and on one or two occasions saw the fruit on sale in the Bazaars.

Mōsh—موش—*mush*—grief, sorrow, lamentation.

Moschus moschiferus, *Linn.*

The Musk Deer, from which is obtained the gland technically called the Musk-pod, that contains the Musk, *tibit mushk.* This is imported from Central Asia to be employed as a scent, or in medicine.

MOTH—*shaprak, shauprak.*

Mukal—مقل—is Bdellium, a gum-resin yielded by a BALSAMODENDRON species. The gum-resin *gugal*

of Baluchistan is yielded by BALSAMODENDRON MUKUL.

Mukal-i-azrak—مقل ازرق—*mulk-i-azrak*, [pure Bdellium], yielded by BALSAMODENDRON species.

MULBERRY—the tree and fruit of MORUS species.

MULE—*āstar*, *āstār*, *kātar*.

The religious prejudices of the Afghans object to mules, hence they are uncommon in Afghanistan. In Persia it is by mules that all the rapid travelling and quick conveyance of goods takes place; they convey heavy loads rapidly by long marches, and exist upon miserable fare. When mules are well cared for, it is marvellous what an amount of work they will do.

Mulī—مولي—(Hind). A Radish, RAPHANUS SATIVUS.

Mulk—ملک—a country.

Mum—موم—*mōm*—Bees-wax.

Mumīāī—مومیاي—*mōmlāī*—a natural mineral pitch, or mineral oil collected in the Kohistan range.

Munj—مونج—Turkomani and Punjabi for the grass ERIANTHUS RAVENNÆ.

Mur—مر—Myrrh, the gum-resin of BALSAMODENDRON MYRRHA.

Murda—مرده—dead, a dead body, a corpse.

Murda-sang—مرده سنگ—[death-stone]. The Oxide of Lead, white-lead.

Murgh—مرغ—a bird, the domestic fowl, or its male.

Mush, *mōsh*—موش—grief, sorrow, lamentation.

Mush, probably for *māsh*—ماش—PHASEOLUS MUNGO, var. RADIATUS.

Mushing, *mashing*—مشنگ—VICIA ERVILIA.

Mushing-dewāna, *mashing-dewāna*, or *musung-dewāna* [(the grain) *mushing* that produces foolishness], Darnel-grass, LOLIUM TEMULENTUM.

Mushk—مشک—the MUSK-POD from Tibet, the gland of the Musk-deer, MOSCHUS MOSCHIFERUS.

Mushk-ak—[the little Musk-scented one]. A Kuram

Valley name for the roots of VALERIANA WALLICHIANA.

MUSK—the musk-pod, *mushk*, *tibit*—Musk-scented, Arabic *latīm*, *ultīb*, *latīb*, *āltīb*.

Mustakī-rumī — مصطكي رومي — [Turkish Mastich]. Gum-mastich, the gum-resin of PISTACIA LENTISCUS.

Mustela, species. WEASEL, MARTEN.

Musung-dewana—Darnel-grass, LOLIUM TEMULENTUM.

Myristica fragrans, *Houtt.* MYRISTICEÆ.

The kernel of the fruit of this plant is the Nutmeg of commerce, *jouz-i-bōīa*, and *jouz-a-bīa*. It is imported either as a condiment or medicine, as is also the aril of the seed Mace, *baz-bāz;* the latter is, however, little known in these parts.

MYROBALANS—the fruit of TERMINALIA species.

MYRRH — the gum-resin of BALSAMODENDRON MYRRHA.

Nabāt—نبات—Sugar-candy.

Nagun—نگون—misplaced, inverted, topsy-turvy.

Nahar— نهر—a canal.

Nāī—ناي—a reed. This name is usually applied to reeds of PHRAGMITES and ERIANTHUS, of which the reeds are much smaller than those of ARUNDO, the last usually going under the name *nāl*, though occasionally called *nāī*.

Nāju—ناژو—or *naoju*. The tree PINUS HALEPENSIS, and its cones.

Nāk—ناک—a fine grafted variety of the pear; the fruit is large, and sometimes very good. PYRUS COMMUNIS.

Nakh—نخ—thread of any material.

Nakhud — نخود — the plant and grain of CICER ARIETINUM.

Nāl—نال—the reeds of ARUNDO DONAX.

Namak — نمک — pronounced also *namik*, *nemak*. Salt.

Namak-sār—نمکسار—salt-fields, or salt-mines.

Nān—نان—bread.

Nannorrhops Ritchieana, *Wendl.* PALMEÆ.

Is the common dwarf palm of Baluchistan, called *pīsh*, *pesh*. I did not observe it after passing Nushki.

Nao—نو—*nu*, *no*. New, fresh.

Naosh-ādar, *nōsh-ādar* — نوشادر — Sal-ammoniac, CHLORIDE OF AMMONIUM.

Nar—نر—the male.

Nar-kachur—[male-kachur]. The long tubers of CURCUMA ZEDOARIA.

Nār—نار—the fruit of the Pomegranate; fire.

Narcissus Tazetta, *Linn.* var. AMARYLLIDEÆ.

The Narcissus, *nastar*, *nargis*. The bulbs of this plant were obtained by me at Bala-morghab in the winter of 1884, and sent to Kew on the 18th January 1885. They flowered at Kew during 1887, producing a double crown; this is worthy of notice, as the bulbs were those of indigenous plants, and not collected anywhere near where they could have been from cultivation. During the summer I did not meet with the plant, and therefore had no specimens of it in my herbarium.

NARCOTICS, not employed as drugs. The resin and dried leaves of Indian Hemp, CANNABIS SATIVA; Tobacco, the prepared leaves of NICOTIANA TABACUM and NICOTIANA RUSTICA.

Nardostachys Jatamansi, *D'C.*, VALERIANEÆ.

Spikenard, *bālchīr*, *bālchōr*, *sambal-ultīb*, *sanbal-ultīb*, *alak*.

Nargis—نرگس—NARCISSUS species.

Narm—نرم—soft, mild, gentle.

Naruk—نروک—*narak*. A shrub, SALSOLA species.

Nāshpātī — ناشپاتي — *nāspātī* — the common pear, the fruit of PYRUS COMMUNIS, of ordinary quality.

Nashuk-kardan — نشوق کردن — to snuff, to inhale snuff.

Nashwār — نشوار — *naswār* — in Arabic means the food which a ruminating animal keeps in its mouth to chew. Snuff.

Nashwārī, naswārī — the name for the small specimens of the Bottle-gourd, LAGENARIA VULGARIS, fruit, employed as bottles to hold snuff.

Nāspāl—ناسپال—the rind of the Pomegranate, PUNICA GRANATUM.

Nastar—نستر—*nastaran*—نسترن—a NARCISSUS, or the white rose of India, ROSA MOSCHATA.

Nāurinj, for *āurinj*, *āuranj*, the Orange, CITRUS AURANTIUM.

NECTARINE, a form of the Peach, PRUNUS PERSICA, var.

NEEDLES, *sanesh*

These are fixed in wax, and are employed in scratching the surface of the seed-vessels of the Opium Poppy, PAPAVER SOMNIFERUM, to permit of the escape of the milky juice, which upon becoming inspissated is Opium.

Nerium odorum, *Soland.* APOCYNACEÆ.

The Oleander, *khar-zahra;* in Baluchistan, *jaur.* By no means an uncommon shrub in the TAMARIX thickets of Baluchistan, near water. Is extremely poisonous to camels, as also to donkeys; the former never learn to avoid it, the latter do. It is not employed as fuel, as the natives assert the smoke from the fuel to be poisonous to those sitting round the fire. Except the form cultivated in gardens, I did not collect or see the shrub north of Baluchistan.

NEW—*Nao, no, nu, tāza.*

Nicotiana Tabacum, *Linn.* SOLANACEÆ, and
Nicotiana rustica, *Linn.* SOLANACEÆ.

Tobacco, *tambāku, tumāku, tamāku;* and *N. rustica* is especially identified as *turkomānī.* The tobacco plant is largely cultivated for local consumption, as well as to be employed in local trade. It is an expensive crop to raise, as the fields are very heavily manured, and they require a great deal of irrigation to give anything of a fair crop; these fields of tobacco are terribly infested by the parasite OROBANCHE EGYPTIACA, so much so that on its being in flower the blossoms give the land a general blue hue. In addition to the leaf being smoked it is much used either as an errhine as snuff, or is applied to the gum under the upper lip, above the incisor teeth, where the morsel lies like a plug of tobacco, and I suppose acts much in the same way on the constitution as chewing. A somewhat similar habit of applying snuff to the gums was called in the southern states of America "snuff-dipping" (Webster's *Dictionary,* 1880.) The ordinary term for snuff is *nashwār;* now it is curious that this should be the term applied by the Arabs for the cud that is kept in the mouth and chewed by ruminants, which would exactly apply to the use of the word in either chewing tobacco or placing it between the lip and gum, allowing it to lie in the mouth. Snuff is mixed with the powdered stems or ashes of EPHEDRA PACHYCLADA; this is said to improve its errhine action, making it more pungent.

Nigella, species. RANUNCULACEÆ.

The seeds of a species of NIGELLA are imported from Afghanistan into India as a drug, under the names *shaōdāru, shavadāru, shaonīz.*

Nīl—نيل—*nīla*—نيلة—Indigo, the dye-stuff obtained from INDIGOFERA TINCTORUM. Blue colour.

Nīlī—نيلي—belonging to the Nile; blue, livid.

Nīl-a-far, nīlfar—نيلفر—*nīlpar*—نيلپر—

A water lily; here the name of a species of IPOMŒA, the flowers of which are of a lovely blue colour; this is cultivated for the beauty of its flowers, as well as for its seed, to be employed in medicine.

Nīl-tutiā—نیل توتیا—Sulphate of Copper.

Nitraria Schoberi, *Linn.* ZYGOPHYLLACEÆ.

One of the few shrubs not grazed on by camels.

Nitrate of Potash.

Nitre, Saltpetre, *shōra.* This, I was told, was obtained over the whole country, by any one who chose to take the trouble of collecting the soil from the vicinity of ruins and the *debris* of old houses, but that experts alone collected the soil of certain localities in the open country, which contained a greater amount of the salt. The soil collected is mixed with water; the water is then removed and evaporated, the residue is again dissolved in water, and the water treated as before; on the second evaporation, sometimes requiring a third, are obtained fine crystals of saltpetre; these crystals are called *shōre-kalmī.* It is chiefly employed in the manufacture of gunpowder, which almost any one in this country seems to know how to prepare.

Nosh—نوش—an antidote.

Nosh-ādar—نوش ادر—[the antidote to fire]. CHLORIDE OF AMMONIUM, Sal-ammoniac.

NUT—*jaōz, jouz, gōz, gōza, ghōza, ghōja, kōza;* fruit stones, *khura.*

Walnuts, the nuts of JUGLANS REGIA, *gōz, jaōz, chār-magz.*

Pistacio Nuts, the nuts of PISTACIA VERA, *pista.*

Almonds, the nuts of PRUNUS AMYGDALUS, *bādām.*

The Sweet Almonds, or kernels of PRUNUS PERSICA, var. *kashta-shīrīn.*

Pine Nuts, the seeds of the Pine, PINUS GERARDIANA, *chīl-ghōza.*

Pistacio Nuts, Walnuts, and Almonds are articles of great importance in the export trade of the country.

NUTMEG—the kernel of MYRISTICA FRAGRANS.

NUX-VOMICA—the plant and seed of STRYCHNOS NUX-VOMICA.

OAK—QUERCUS species.

OAK-GALLS—*māju.* The galls of a species of QUERCUS.

OATS, WILD. AVENA FATUA.
OIL—*rōghan.*

The oils produced in these districts may be classed under (1) those chiefly restricted to lighting; (2) food oils; (3) medicinal oils.

I. OILS RESTRICTED TO LIGHTING PURPOSES.

The chief plant grown to yield an oil for burning is RICINUS COMMUNIS, the Castor Oil plant, which may be seen growing in strips round the margin of cotton and melon fields. This yields by far the greatest proportion of the oil that is consumed in the country for lighting purposes. From the seed of the cotton plant, GOSSYPIUM HERBACEUM, is extracted an oil which is only used in lighting. Poppy, Rape, and Eruca-seed oils are used as lighting oils, but are also employed in dietary.

In Turkistan the oil of CANNABIS SATIVA is extensively used in lighting, and that of Linseed both for lighting and as a food oil; these are almost unknown in these districts, as the plants are not grown here, and the oils are rarely imported. Apricot-seed oil is equally used for burning and in diet in that country.

II. FOOD OILS.

SESAMUM and ELÆAGNUS oils are almost entirely used for food purposes, along with a little of the Poppy, Rape, and Eruca-seed oils. The oil of the seeds of several of the CUCURBITACEÆ are used on rare occasions in the diet. The oil of the seed of PISTACIA TEREBINTHUS, var. MUTICA, is much used along with food in those localities where the tree grows, eaten mixed with oxygal as a flavouring to bread.

III. MEDICINAL OILS.

That of the Walnut, the Pistacio Nut, and Apricot are used here in medicine alone, as also is the imported Castor Oil. On one occasion alone did I hear that the oil of the locally grown plant RICINUS COMMUNIS was useful in medicine. A natural mineral oil, or pitch, is collected in the Kohistan range, and an artificially prepared tar, or pitch, made by the destructive distillation of sheep and goat manure, are both employed in local medicine.

POPPY-SEED OIL. The oil of the seed of PAPAVER SOMNIFERUM, *rōghan-i-khush-khāsh.*

RAPE-SEED OIL. The oil of the seed of BRASSICA CAMPESTRIS, *rōghan-i-shersham*, or *sarshaf.*

ERUCA-SEED OIL. The oil of the seed of ERUCA SATIVA, *rōghan-i-til.* The plant and seed *mandāo.*

COTTON-SEED OIL. The oil of the seed of GOSSYPIUM HERBACEUM, *rōghan-i-tāza, rōghan-i-pamba-dāna.*

LINSEED OIL. The oil of the seed of LINUM USITATISSIMUM, *rōghan-i-zagher.*

PISTACIO OIL. The oil from the fruit of PISTACIA TEREBINTHUS, var. MUTICA, *rōghan-i-kanjak.*

PISTACIO-NUT OIL. The oil from the kernel of PISTACIA VERA, *rōghan-i-pista.*

APRICOT OIL. The oil of the almond of the Apricot, PRUNUS ARMENIACA, *rōghan-i-zard-ālu.*

MELON-SEED OIL. The oil of the seed of CUCUMIS MELO, *rōghan-i-tukhm ;* but the oil of any of the CUCURBITACEÆ, is also so named.

SESAMUM-SEED OIL. The oil of the seed of SESAMUM INDICUM, *rōghan-i-kanjīd.*

ELÆAGNUS-SEED OIL. The oil of the seed of ELÆAGNUS HORTENSIS, *rōghan-i-sinjit.*

CASTOR OIL. The oil of the seed of RICINUS COMMUNIS, *rōghan-i-baz-anjīr.*

INDIAN HEMP-SEED OIL. The oil of the seed of CANNABIS SATIVA, *rōghan-i-chars.* An intoxicating preparation from the same, *majun.*

WALNUT OIL. The oil from the kernel of the Walnut, JUGLANS REGIA, *rōghan-i-jauz.*

MINERAL OIL, or PITCH, a natural production exuding from the soil, *mumīāī* ; an artificial, chemically-prepared oil, or pitch, *rōgan-i-sīa*, or *sīa-rōghan.*

CLARIFIED BUTTER, *rōghan-i-zard*, [yellow oil] ; or *rōghan-i-gao*, [cow-oil] ; Hindustani, *ghī.*

OIL-CAKE—the refuse from the oil-seeds, *kunjāra, kazb.*

OIL MINERAL—a natural exudation from the soil, *mumīāī.*

OIL-VESSELS—*daba.*

These are great vessels made of the prepared skins and intestines of animals ; or, in Persia and Central Asia, equally

as often of the viscous glue-like gum of an EREMURUS species. The two kinds of vessels are identified from each other, in speaking of them, by adding the words *charm*, or *sarīsh*, the former meaning a vessel prepared from skins, the latter meaning from vegetable glue.

Ok—

The wooden supports of the roof of the *kabitka*, usually made of willow, SALIX species, and bent by means of fixed levers, or by the heat of fire, to the peculiar form required.

Olea europæa, *Linn.* var. OLEACEÆ.

The Olive, *zetun; kao* (Punjabi). After leaving Baluchistan I did not see this shrub or tree. In Baluchistan, and in part of the Kuram Valley of Afghanistan, it is an indigenous tree, but is often cultivated round shrines.

OLEANDER—NERIUM ODORUM.

OLEASTER—

According to Lindley and Moore is an ELÆAGNUS; according to De Candolle (*Origin of Cultivated Plants*) is the indigenous Olive, OLEA EUROPÆA.

OLIBANUM—the gum-resin of a BOSWELLIA species.

OLIVE—OLEA EUROPÆA.

OMUM SEED—the fruit of CARUM COPTICUM.

ONION—the cultivated ALLIUM CEPA.

OPIUM—the inspissated juice of PAPAVER SOMNIFERUM.

ORANGE—the fruit of CITRUS AURANTIUM.

Orchis latifolia, *Linn.* ORCHIDEÆ, and
Orchis laxiflora, *Linn.* ORCHIDEÆ.

SALEP, our dictionary name for the tubers of ORCHIS LATIFOLIA, which are palmately divided, and those of ORCHIS LAXIFLORA, which are simple tubers; both are collected under the name *sālab*, or *sālap*, and form an export article of very ancient repute to India, where amongst the natives they have been long highly valued as a medicine for strengthening a weakened constitution. The tubers, as met with in the trade, are usually strung as beads on pieces of

string; in this way they are more easily dried and preserved for transportation. I only collected the above two species, and they are by no means common, owing to the localities on which they thrive being limited, as well as the fact that the tubers have been collected from these localities for centuries, and hence the wonder is that these plants have not been altogether eradicated. One cause in favour of their being still present in these parts is that sheep and goats do not browse on them, as where every blade of grass and other herbs had been closely cropped the flowers of the above species of Orchids were standing out in great beauty.

The value of Orchis tubers in the trade has created a continuous attempt to substitute in their place the bulbs or tubers of other plants. In the museum at Kew I found bulbs of what I believe to be the bulbs of TULIPA MONTANA with the external coatings removed, marked as having been originally sent to Kew as *sālap*, and, as seen by my paper in the *Annals of Botany*, the bulbs of ALLIUM M'LEANII and other species of ALLIUM are sold as *bādsha-sālap* or as *ambar-kand*. At Meshad, I was informed that *sālap-misrī* was an import from Egypt, and that it differed from the *sālab* of the country. I was unable to obtain any of it. EULOPHIA CAMPESTRIS is found in quantity in special localities in the Punjab, Baluchistan, and Afghanistan. The tubers of this plant are simple, but on the whole larger than those of ORCHIS LAXIFLORA. They are collected in the vicinity of Lahore, and I do not see why they should not also form part of the tubers exported from Afghanistan and Baluchistan into India.

Ōrisā, ōrisīā—اورسیا—the scented rhizome of an IRIS species.

Orobanche, species. OROBANCHACEÆ.

Several species of Orobanche are extremely common throughout the country, growing as parasites on LABIATÆ, CHENOPODEÆ, PYCNOCYCLA, COUSINIA, ARTEMISIA, NICOTIANA, CUCUMIS, and TAMARIX. One species, growing to over 2 feet in height, with a splendid spike of purplish flowers, occurs profusely in TAMARIX thickets, in such abundance that it is collected by camel drivers in Baluchistan as fodder

for their camels. This is called *labu ;* other species, called *pīr-injīr* and *samārukh*, are eaten as vegetables by the natives. OROBANCHE ÆGYPTIACA colours, with the luxuriance of its flowers, melon and tobacco fields, from the profusion in which it grows amongst these crops.

ORPIMENT—yellow arsenic, *zarnīkh.*

ORRIS ROOT—the rhizomes of IRIS species.

Ors — ارس — *ōrs* — اورس — *orsa, ārcha* — the tree Juniper, JUNIPERUS EXCELSA.

Oryza sativa, *Linn.* GRAMINEÆ.

Rice. The plant, *shālī* ; the grain, *beranj, berinj.* I only saw rice once being cultivated in these travels, and that was in Khorasan, where its cultivation at any time is most exceptional. It is grown in quantity at Panjdeh and Maimana, from whence the greater part of the rice consumed in Khorasan and Herat is obtained. The rest is grown to the east of Herat, or brought from the Cabul Valley. The Caspian provinces of Persia are said to yield an abundant supply of rice. In these regions new rice is preferred as food to old, which is quite the reverse in Bengal.

OTTER—LUTRA species ; *sag-ābī.*

OXEN—

Of these there are very few, either in the Herat district or in Khorasan. I never saw any being employed for agricultural purposes. On the Hamun of the Helmand we saw large droves, and on the Helmand we met droves conveying raw cotton up the river.

OXYGAL—

An old English technical term applied to sour milk, from the Greek words *oxus*, and *gala.* Richardson, in his *Persian Dictionary*, edited by Francis Johnson, 1829, uses this term, and speaks of *māst*, which is very sour coagulated milk, as oxygal, and *māstāwa, māstwā,* and *karut*, the dried curds of sour butter-milk, as dried oxygal.

Pāchak—پاچک—dried cow-dung, used as fuel.

Pada—پدہ—*padak*—POPULUS EUPHRATICA.

Pāe—پاې—the foot, footstep; a rest for a gun, or rifle.

Pāe-bandukī—a gun-rest.

Pakhta — پښته — the fibre of cotton, GOSSYPIUM HERBACEUM.

Pakhta-chōb, or *chub*, or *chu*—the cotton plant, or shrub.

Palīta — پلیته — the wick of a candle or lamp, splinters of wood, *palīta*, *phalīta*, in Baluchistan the plant STELLERA LESSERTII.

Palīta-gogird—

A piece of stick on the end of which cotton has been wrapped, and then dipped in a mixture of sulphur and water and dried. These are the spunks of Afghanistan, and were always in use before the days of lucifer matches; they are still in common use.

PALM—PHŒNIX DACTYLIFERA, the Date Palm; NANNORRHOPS RITCHIEANA, the dwarf palm of Baluchistan.

Palti—EUPHORBIA CHEIROLEPIS.

Pamba—*panba*—پنبہ—*pumba*—the fibre cotton, raw cotton, GOSSYPIUM HERBACEUM.

Pamba-chōb, or *chub*, or *chu*—the cotton plant, or shrub.

Pamba-dāna—cotton seed.

Panicum miliaceum, *Linn.* GRAMINEÆ.

Common Millet, *arzan;* the *chīnī* of the Punjab. Is freely cultivated all over the country; much eaten as bread, and also cooked somewhat like rice. There is a red variety of grain called *gāl.*

Panīr—پنیر—cheese.

Panīr-māīa—پنیرمایہ—[cheese-leaven], rennet.

Papaver dubium, var. LÆVIGATUM, *Elk.* PAPAVERACEÆ.

Papaver pavoninum, *C. A. Mey.* PAPAVERACEÆ, and RŒMERIA species.

Owing to the brilliancy and similarity of their flowers are called *gul-i-dukhtar*, and *lāla-dukhtar*.

Papaver somniferum, *Linn.* PAPAVERACEÆ.

The Opium Poppy. The plant, *kōknār;* the capsule, *gōza, khōl-a-kōknār, pōst-a-kōknār;* the seed, *tukhm-i-khash-khāsh;* the milky juice, *shīra;* the needles, set in wax for scratching the capsules, *sanesh;* the inspissated juice Opium, *afīun, tarīāk;* the oil of the seed, *rōghan-i-khash-khāsh.* In Persia, where there is a liberal supply of water for irrigation, and in the close vicinity of the village, are to be seen the fields of the opium poppy, more especially since the failure in the silk crop, as wherever the villages have suffered from the disease amongst the silkworms the inhabitants have taken to the culture of opium, resulting in a complete demoralization of the villagers, who almost as a whole—men, women, and children—have adopted the pernicious practice of eating, besides many of smoking, the drug. In Afghanistan there is little opium grown, and the wholesale demoralization is absent. At Bezd, and other villages in Persia children came to me asking for some means of getting rid of the habit, and out of every small crowd of children who used to surround my tent, coming to see the stranger, one or two could be picked out from amongst the number, from their haggard looks and peculiar pasty complexion, as being addicted to smoking the poison. The eaters looked upon the habit of smoking as an enormity that they would never adopt. Large quantities of opium are traded in between the villages and towns, but what became of it after that I could never find out. The people were very reticent in talking about the trade in opium, I suppose owing to the heavy Government tax upon its cultivation and sale. The oil of the seeds is much used for burning, as also for food, and the seeds are eaten in sweetmeats.

Par—پر—a wing, a feather, a leaf, flying, one who flies.

Pār—پار—rain, a bit, a piece.

Pāra—پارہ—a piece, a portion.

Pashm—پشم—wool, feather, down.
Pashmīn—پشمین—*pashmīna*—پشمینه—woollen.

In Kashmir and India means the fine hair removed from the coarser parts of the fleece of the goat. In Persia simply wool, woollen.

Pat—plains of clay; land almost of a dead level, the surface covered with a layer of clay deposited by water.

Pat—پټ—fine goat's hair, separated from the ordinary hair of the goat; a fabric made from it, *patu*—پټو—also called *kurg* and *kurk;* but *patu* is also applied to a fabric made of sheep's wool.

PEA—PISUM species.

PEACH—the fruit of PRUNUS PERSICA.

PEAR—the tree and fruit of PYRUS COMMUNIS.

Pech—پیچ—twisted, folded, intertwined.

Pechak—پیچک—[the small climber]. In Baluchistan applied to a species of CYNANCHUM (?); a climber.

Peganum Harmala, *Linn.* RUTACEÆ.

The wild rue, *harmal, ispanthan, ispand, isfand, spand, spandan, spanj, spangaoli, spingulī.* This shrub was common over the whole country traversed up to an altitude of 4000 feet. The natives employ it in medicine, as it is supposed to be efficacious in many diseases. On the occurrence of an epidemic, as cholera, they collect it in heaps and burn it through the villages; they consider it drives away evil spirits. In Persia it was a common thing to see a bush of this hung up in doorways to protect the inmates from evil spirits. One of our encampments at Quetta was called *spangaoli* from the profusion of this shrub at that locality.

Pela, pīla—پیله—the cocoon of the silkworm, a button, a knot, the core of a boil, a seed, a root, the smallwares of a pedlar.

PEN—*kalm.*

Pens are imported into Afghanistan, Northern India, and Kashmir from Persia. These are made of reeds, and are highly valued by the writers of manuscripts. At Sangun, in Persia, I found in the gardens a grass called *kalmī*, an ERIANTHUS (?), being cultivated for its reeds. The ordinary pens are made from the reeds of the local grasses, ERIANTHUS RAVENNÆ and PHRAGMITES COMMUNIS.

Pennisetum dichotomum, *Del.* GRAMINEÆ.

Bamboo-grass, *bārshonk.* At the skirts of the low hills, on stony ground, in the Baluchistan Desert, this grass grew in great luxuriance, producing long, woody, jointed, bamboo-like, trailing stems, very different in habit to the same grass in the Punjab. The stems in autumn were devoid of leaves, and when collected in heaps for fodder looked like so many twisted cuttings from the small bamboo. At first sight no one expected that horses would eat these sticks as fodder, but they did, and seemed to appreciate them.

PENNISETUM ITALICUM, *R. Br.*, is a synonym for SETARIA ITALICA, *Beauv.* Italian millet.

Pennisetum spicatum, *Del.* GRAMINEÆ.

Spiked Millet—the *bājrā* of Hindustan. Common in Baluchistan and on the Helmand, as a field crop. In the rest of the country through which I passed it only occurred as single plants here and there, through tobacco, cotton, and melon fields.

PEPPER—Black Pepper, PIPER NIGRUM; Red Pepper, CAPSICUM species.

PEPPERMINT-SCENTED—ZIZIPHORA TENUIOR.

Periploca aphylla, *Dcne.* ASCLEPIADACEÆ.

Hum, huma, um, uma; bata (Punjabi). A common shrub in the rocky parts of Baluchistan. Owing to its leafless habit and rod-like stems it is somewhat similar in appearance to EPHEDRA PACHYCLADA; they both go by the same names in that district.

Pesh—پیش—before, in front, beyond.
Pewand—پیوند—bound, fastened.
Pewandī—پیوندي—grafted.
Pewand-kardan—پیوند کردن—to graft.
Phan—پهن—(Sanscrit) the hood, or expanded head of a Cobra.
Phandhār—پهندهٔ—*phanār* (Sanscrit).

A Cobra. *Phanār* is the name for ARUM GRIFFITHII and for HELIOCOPHYLLUM CRASSIFOLIUM in these parts, owing no doubt to the resemblance that their spathes have to the expanded wood of a Cobra.

Phaseolus Mungo, *Linn.*, var. RADIATUS, *Baker* (*Hook. Fl. Ind.*). LEGUMINOSÆ.
Phaseolus radiatus, *Linn.*

Māsh, mush; the *mung*, or *urd* of Hindustan. Cultivated in Baluchistan, and on the Helmand. The pulse used as food, and the refuse straw and leaves crushed and given as dry fodder to cattle mixed with that of wheat and barley.

Phaseolus vulgaris, *Savi.* LEGUMINOSÆ.

The Kidney-bean, common Haricot-bean, or French-bean, *lobīa, lubīa.* Cultivated freely on the margins of melon and tobacco fields, where profuse irrigation is being carried out. The beans are much eaten as food, and are found for sale in all bazaars.

Phœnix dactylifera, *Linn.* PALMEÆ.

The Date Palm. The Baluchistan name for the palm-tree is *māch;* the fruit, Dates, *khorma, khurmā.* This palm is cultivated in Baluchistan and Southern Persia; the most northern locality where it was met with by us was at Zagin. The river Helmand may be considered its northern limit. The fruit is imported from Southern Persia and Siestan to Meshad and Herat, from whence it is exported to Turkistan and Western Afghanistan. It is much relished by the people, who have a superstitious regard for it as coming from Mecca. It is partaken of at some of their holiest feasts. This is one of the staple articles that the pilgrims from Mecca carry with them for exchange, and payment of small

debts. Of course, according to the pilgrim, the store they carry with them has always come from Mecca, or Arabia at least, and not been purchased at the last bazaar they passed through.

Phog, pog—the glasswort tree, CALLIGONUM COMOSUM.

Phragmites communis, *Trin.* GRAMINEÆ.

The common Reed, *nāī*. Is abundant, growing in localities where there is shallow slow-running water, on the sides of irrigation channels, and similar localities where there is plenty of moisture. In the young state it is cut and employed as fodder. The stems are used in various ways—for the roofing of huts, basket-work, mats, screens, and sometimes for local pens.

Phun-dāna—the seeds of GOSSYPIUM HERBACEUM; cotton.

Pīāz—پیاز—the common Onion, ALLIUM CEPA.

Pīāz-khūkī—[pig-onion], UNGERNIA TRISPHÆRA.

PIG—*khūk, khanzīr*—SUS SCROFA.

PIG-NUTS—tubers of CARUM species.

PIG-ONION—UNGERNIA TRISPHÆRA.

Pīla, pela—پیلہ—the cocoon of the silkworm, a button, a knot, the core of a boil, a seed, a root, the smallwares of a pedlar.

PILGRIM — of Mecca, *hājī;* of Meshad, *mashdī*. Pilgrims carry with them for exchange, or sale, Senna, Saffron, Dates, Cuttle-bone.

Pilpil—پلپل—or *filfil, pīlpīl, fīlfīl*—Red Pepper, CAPSICUM species.

Pimpinella Anisum, *Linn.* UMBELLIFERÆ.

Anise. The fruit, Aniseed, *badīān*. Cultivated in gardens for its seed, to be employed as a condiment and in medicine.

PINE CONE—*Nāju, naoju*; *guta* (Kuram Valley).

Pinus Gerardiana, *Wall.* CONIFERÆ.

Gerard's Pine. The tree, *chīr, chīl;* the seeds, or nuts, *chīl-*

ghōza. The seed of this pine is one of the great trade products exported from the district of Kost and the Kuram Valley to India, where the tree is called *zan-ghōza*, the seeds *zan-ghōz*, and the cones *guta.* The tree does not exist, as far as I could learn, anywhere near Herat, and I did not come across the seeds in any of the bazaars, so if they are to be got at Herat their occurrence in the trade must be rare; they are quite replaced here by the kernels of the Pistacio Nut.

This pine occurs on the Suliman range, with PINUS EXCELSA, at and above 7000 feet; it is there called *chīr, chīl.* As far as I could learn from hearsay, and from specimens brought to me of the pines that occur on this range, no PINUS LONGIFOLIA exists on it. The nearest locality to the plains of the Punjab where Gerard's Pine grows, is on the Suliman range opposite Dehra-Ismail-khan, from which it would be possible to get fresh seeds to England in a fit state to germinate. All the seed that I was ever able to send from other localities were usually reported upon "as dead as door nails." The difficulty of transporting these in a healthy condition for germinating consists in their oleaginous nature, and it must be also remembered that in extracting the seeds from the cones, the natives place the cones on hot stones, or even partially burn them; this causes the hard scales of the cone to expand, and then the seeds are easily shaken out, so that this method of extracting the seeds may have been also one of the reasons why all that I sent to England were unable to germinate. I think there would be a greater chance of success if the entire cones were forwarded. This pine, it seems to me, ought to do well on the Riviera.

Pinus longifolia, *Roxb.* CONIFERÆ.

The Long-leafed pine, *chīr, chīl.* Is a north-west, outer Himalayan pine, extending from the Indus river eastwards, and not to the west of that river. It is however cultivated at Peshawur, Kohat, and at most of our frontier stations. The *Flora of British India* gives Afghanistan as the distribution of this pine. To this I cannot agree (see "On the Flora of the Kuram Valley," *Linn. Soc. Jour.*, vol. xix. pt. ii. p. 142).

Pinus halepensis, *Mill.* CONIFERÆ.

A very fine cultivated tree, *nāju, nāoju.* In Afghanistan

it is usually met with planted in the vicinity of shrines—Kandahar, (No. 714, Griffith); Jelalabad (Dr Cattell); Kuram Valley, Zeran (Aitchison); on Persian territory planted in long rows to give protection to orchards and gardens. At Turbat-i-shaikh-jami there were some fine trees, but most of them were in a dying condition from the effects of a heavy fall of snow which had occurred a few years ago; the snow lay for some days, and this apparently ringed the trees, thoroughly killing the bark round them, and thus causing the destruction of nearly all. Here I was informed that there was a forest of the tree at Rui-khauf. On visiting that town I found some splendid rows of cultivated trees, but as to a natural forest there was not even a semblance of one. The nearest thing to a natural forest of this pine is at a shrine at Karokh, two nights' march from Herat, on the road to Kala-nao, and where the tree has spread naturally round the shrine, the original trees being well cared for, and the locality where they grow being suited to the tree. The wood is highly valued as timber for roofing, for doors, and lintels. It is known to yield a resin, but the trees are too much valued to permit of any being collected. The cones are carried away from the shrines by the ladies of the nomad tribes to be placed in their work-bags to be kept there to bring luck.

Piper nigrum, *Linn.* PIPERACEÆ.

The fruit Black-pepper, *dāru-garm, daur-garm, march.* Imported through India or through Southern Persia, as a medicine or condiment; it forms part of the well-known aromatic powder of Persia, *aduīa-deg.*

Pīr—پیر—an old man.

Pīr-injīr—OROBANCHE species.

Pīr-wathī—a climber, CYNANCHUM species.

Pīsh, pesh—پیش—the dwarf palm of Baluchistan NANNORRHOPS RITCHIEANA.

Pishak—پشک—*pushak*—پوشک—a cat.

Pistā—پستا—*pista*—پسته—the Pistacio-nut, the nut of PISTACIA VERA.

Pistacia Lentiscus, *Linn.* ANACARDIACEÆ.

Yields Mastich, *kandur-i-rumī, kundar-i-rumī, mastakā-i-*

rumī. This is imported from Turkey into Meshad, most of it for exportation.

Pistacia Terebinthus, *Linn.*, var. MUTICA, *Aitch. et Hemsley.* ANACARDIACEÆ.

This includes PISTACIA MUTICA, *Fisch. et Mey;* PISTACIA KHINJUK, *Stocks;* PISTACIA CABULICA, *Stocks; ban, wan, wana, gwan, gwana, kanjak, kinjak, kunjad;* the resin, which cannot be ordinarily distinguished from that of PISTACIA VERA, goes by the same names as those of the latter tree, *kunjad, kunjada, khunjad, khunjada, kinjad, kinjada, wanjad, wanizad, kandur, kundar, kundarud, kunderu, shilm;* the leaves, *gosh-wāra, barg-a-bana;* the oil, *rōghan-i-kanjak.* This is the South and East Persian, Southern Afghan, and the Baluchistan PISTACIA; it extends eastwards to the Kuram Valley, and as far North-east as Gilgit. It has been described under several species, all of which may be united as a variety of PISTACIA TEREBINTHUS. It is *the* tree of Baluchistan, and hence its name, *ban, wan, gwan*; on Persian territory, and near Herat, its name is altered to *kinjad, kunjad.* It is usually a small tree about 18 feet in height, and with a bole of from 3 to 5 feet in circumference, occurring occasionally in clusters, but usually scattered singly at long distances, on limestone formation. In the districts where it is to be met with trees are so scarce that to cut down one would be almost a sacrilege, hence I can say nothing regarding its value as timber, but its dry branches make excellent fuel. The only locality where I saw what could be called a thicket, or small forest of this tree, was on my march between Robat-i-turk and Cha-surkh, on the 19th August 1885, and this thicket had been a few days before set on fire by some nomads who had encamped with their flocks in the vicinity. The nuts are much sought after, to be crushed for their oil, which is eaten as a relish with *karut* (dried oxygal) and bread. The leaves almost without exception are affected by a flat horse-shoe shaped gall, that extends round the margin of the leaf; this gall is so very distinct in form, much resembling the lobe of the ear, that the leaves get their name *gōshwāra*, meaning ear-like, owing to this resemblance; by these galls alone the leaves of this species may be identified from those of PISTACIA VERA. These galls the natives say are of no use, but the

leaves are valued for dyeing and tanning with. May not the presence of the galls on the leaves be the reason why these leaves are employed, and that the galls are really the active part of the leaf? The Mastich, or gum-resin of this tree, with that of PISTACIA VERA, is considered as one, both going by the same names, and being employed in medicine for similar purposes, viz., for dressing wounds and sores, for which uses they are highly valued; the names mean "the resin for stopping blood," "the remedy for stopping blood," or "for dressing wounds," "the tree-resin." A turpentine is said to be occasionally obtained from the resin, but only by any one specially making it for themselves. The gum-resin is not usually to be found for sale, but it is to be met with in all households, as it is looked upon as an everyday remedy for cuts and bruises.

Pistacia vera, *Linn.* ANACARDIACEÆ.

The indigenous Pistacio tree, that yields the Pistacio Nut, traded with to India. The tree and nut, *pista, pistā;* the country where the tree abounds, *pistalik;* the galls, *bōz-ghanj;* the mastich, or gum-resin, *kunjad, kunjada, khunjad, khunjada, kinjad, kinjada, wanjad, wanizad, kundar, kunda-rud, kunderu, shilm-i-pista,* has the same names as the mastich of PISTACIA TEREBINTHUS, var. MUTICA. It is a small tree, or a large shrub approaching the habit of a tree, with little or no main stem, throwing up numerous branches almost from the root, and averaging in height from 12 to 20 feet, and forming when in full foliage symmetrical clumps like great bushes. Early in autumn it begins to loose its leaves, and by November the tree stands naked, devoid of all foliage. The bark is now seen to have a remarkable grey colouring, so much so that at a little distance portions of a forest give the appearance of smoke passing through it, when what is seen is nothing more than the grey colouring of the bark affected by certain beams of light. This tree is found on sandstone formation at an altitude of 3000 feet. In suitable localities it forms large forests. The most celebrated of these occur in the Badghis, near Kala-nao, and at Zulfikar. There are forests in the hills of Khorasan, to the north of Turbat-shaikh-jami. I myself found the tree occurring in small clumps to the south of Bezd, although the natives

affirmed that the indigenous Pistacio was unknown in those parts. In Persia the cultivated form of PISTACIA VERA is grown in the orchards; this I saw on several occasions, but I did not meet with it in the gardens in Afghanistan, and as far as I could learn it is not cultivated round Herat. It is, however, a common thing to see trees of the indigenous Pistacio growing round shrines, where they are carefully protected. The cultivated tree of orchards has usually a good stem, showing a fair amount of wood, and growing altogether more luxuriantly and more like a tree than the wild form. The value of the forests of the indigenous Pistacio lies in their yield of nuts, but the harvest is a precarious one, greatly due to the tree being diœcious, and to fertilization being frequently unaccomplished. The appearance of the staminate flowers on these trees are the first signs of spring, and as they appear long before there is any sign of leaves, they are unprotected and easily injured by frost, and I have no doubt but that a late recurrence of frost is one of the most frequent causes of a bad nut harvest. The natives say that there is only a good nut harvest every second year, and that when the nuts fail the galls on the leaves are more numerous. The nuts on some of the trees are partially dehiscent, whereas in others they are quite indehiscent. So well is this known to the people of the country, that in collecting nuts for eating, should they chance to come upon a tree of which the nuts are indehiscent, they just move on until they come to a tree bearing dehiscing nuts. In the latter case a slight crushing of the nut with the fingers gives exit to the kernels, whereas in the former each nut has to be broken up, as we would a hazel, before the kernel can be got at. On many trees the female flowers are found not to have been fertilized; these develop into a nut-like form, and when these unfertilized ovaries are examined they are found to be quite hollow, the walls being apparently analogous to the covering of the fertilized nut. These hollow nut-like sacks hang on the trees like bunches of grapes all through the winter (while the fertilized nuts fall off along with the leaves); they are at once recognised by their semi-translucent appearance and larger size than the ordinary fruit; these along with the external covering of the nuts are collected

to be employed in dyeing and tanning, and when dried they rapidly break up, parts of them appearing like portions of the covering of the nut. The leaves of this tree become affected with galls, which are valued in the trade for dyeing silk. These galls are irregular-shaped spheroids, from the size of a cherry to that of a large gooseberry, borne on a short stalk, and usually growing from the upper surface of the blade of the leaf. From the great trade value of the nuts, and of the galls, there is much jealousy as to the forest rights, as to whom they may belong, and in what proportion to each tribe. Half the blood feuds of the nomads originate in their quarrels over the rights of produce in these forests. All persons concerned in the rights to the forest produce unitedly collect the nuts, and the general harvest is subsequently divided in the allotted proportions to those to whom they may belong. In the meanwhile the Amir's tax collectors are at hand ready to carry off the usual tax imposed on produce before it is permitted to leave the ground. The nuts are exported in immense quantities to Afghanistan proper and India, where they are highly appreciated by all classes, as well as to Persia and Turkistan. The galls are exported chiefly to Persia and Turkistan, a very small proportion to India. The gum-resin is a kind of mastich, and is identical with that obtained from PISTACIA TEREBINTHUS, var. MUTICA, similarly employed as a household remedy to be applied to cuts, wounds, and sores, and goes by the same names. From this resin a turpentine can be obtained. The fresh gum-resin, as collected from the trees, has a most pleasant fruity odour; at first it is very liquid, and then gradually hardens on exposure to a very brittle, almost transparent, rather resin-like consistency. The oil is rarely extracted from the nuts, and then only to be employed in medicine. The wood is highly valued for the manufacture of agricultural instruments, especially ploughs, also to make spoons; it certainly makes the best firewood of any in the country. Sheep, camels, and goats feed greedily on the foliage, hence the name applied to the galls, "the goat's store." The galls are, as already stated, employed in dyeing and tanning, but the leaves are not.

At Rawulpindi, in the Punjab, there were, a few years ago, some large bushes of PISTACIA VERA grown from the seeds

of the Afghan indigenous tree, by Colonel Miller, the Inspector-General of Police, in his garden to the front of his house; and in Kashmir I saw one immense tree at Serinagar, this was covered with fine fruit, showing that other trees must also have been in the vicinity. This tree, from the size of its fruit and the method of its growth, I believe to have been raised from the seed of the cultivated form of the PISTACIA VERA. I do not see why, with a very little trouble, the cultivation of the Pistacio should not be carried out with success along the whole of our north-west frontier, from Abbotabad to Quetta.

PISTACIO—the tree and nut of PISTACIA VERA.

Pistalik—

The term applied to those parts of the country that are covered with natural forests of the PISTACIA VERA, as the term Jagdalak or *Jigdalik* is applied to the celebrated pass into Eastern Afghanistan from India, owing to the presence there once of a forest of the Elæagnus.

Pisum sativum, *Linn.* LEGUMINOSÆ.

The common Field-pea, *māsh.* Is cultivated here and there, but not extensively, and not in any quantity in one place. A pea, called *chish-khām,* was also cultivated in fields at Meshad.

PITCH, or Tar, *kār, rōghan-i-sīa*—

Is artificially prepared by the destructive distillation of goat and sheep dung; this is in great request as a remedy to be applied to sheep and other cattle that may suffer from sores or ulcers. A natural mineral product found in the Kohistan range goes by the name of *mōmlāī,* or *mumīāī*; this is highly valued as an internal remedy for many complaints.

PLAIN—a flat expanse of land, *maidān, hamun, dasht;* of clay, *pat.*

PLANE—the Oriental Plane, PLATANUS ORIENTALIS.

Plantago, species. PLANTAGINEÆ.

The grass-like herb Plantain. The seeds, *bārtang, bārang, ispaghul, ispārza, sebush, sepush, shīkam-pāra.* The seeds of several species are employed in medicine for their mucilaginous

properties, especially in affections of the bowels. PLANTAGO MARITIMA covers the surface of the sand that has been deposited by high winds on the banks of the Hari-rud.

Platanus orientalis, *Linn.* PLATANACEÆ.

The Oriental Plane, *chanār, chināar, chunār.* To the east of Meshad, over the country I traversed, this was a cultivated tree. I noticed a few cultivated in Afghanistan; they were more common in Khorasan. At Maimana I was informed there are numerous and superb trees, but all from cultivation, and from whence most of the wood required for this district is imported. To the west of Meshad I found it an indigenous tree, occurring on the banks of streams, forming dense groves. The wood is considered by far the best for the construction of the large gates which are fixed at the entrances to villages. I measured the planks that made up one gateway, and found they were 18 feet long, 18 inches broad, and 4 inches thick. This wood, owing to its being easily worked and fairly tough, is more generally employed than any other for doors, lintels, and sometimes for roofing.

PLATTER, or Wooden Dish—*kās, kās-i-chōbī, kashafa.*
PLUM—the fruit of PRUNUS species.

Poa bulbosa, *Linn.* GRAMINEÆ.

One of the most common and characteristic grasses of the country, called *sīāl-i-we,* a splendid fodder grass, especially profuse on the plains near the Kambao Pass; at the proper season this could be collected to an unlimited amount for storage as hay.

POISON—*zahr, zahra, zahar, riz.*
POISONOUS—

I. THE INDIGENOUS PLANTS THAT ARE CONSIDERED TO BE POISONOUS.

CONIUM MACULATUM, CYNANCHUM ACUTUM, NERIUM ODORUM' the grain of LOLIUM TEMULENTUM, the Ergot on Rye SECALE CEREALE. Goats and sheep grazed on HYOSCYAMUS PUSILLUS and HYOSCYAMUS RETICULATUS without apparent bad effects, and the shepherds did not look upon these herbs as poisonous. DATURA STRAMONIUM was known to be poisonous, but owing

to the localities in which it was only found, and its having no local name of its own, I came to form the opinion that here it has been introduced, and is not an indigenous plant.

II. Poisons imported.

The seeds of Strychnos Nux-vomica, and Arsenic, are imported for the purpose of poisoning dogs and wolves.

Pole-cat—Putorius species.

Polygonatum verticillatum, *All.* Liliaceæ.

The fleshy rhizomes of this plant were collected in the Kuram Valley of Afghanistan under the name *shakākal*, sent to Cabul, and thence exported to India, *via* Peshawur, as *shakākal misrī*, valued by the natives in the same way as Orchis tubers, as a sort of strength-giving food. I did not collect this here, but was informed that it was a common root, collected in the Koh-i-baba range.

Polypogan littorale, *Sm.* Gramineæ.

Kīāk. A grass common on the banks of irrigation channels considered a good fodder grass.

Pomegranate—the fruit of Punica Granatum.

Poplar—the black or Lombardy Poplar, Populus nigra; the Euphratic Poplar, Populus euphratica.

Poppy—the Opium Poppy, Papaver somniferum; wild poppies, Papaver dubium, Papaver pavoninum; and Rœmeria species.

Populus euphratica, *Oliv.* Salicineæ.

The Euphratic Poplar, *pada, padak.* This is an indigenous tree over most of the country traversed; it forms forests on the islands and banks of the Helmand and Hari-rud, showing good-sized timber, but the tree does not average over 20 feet in height; at higher altitudes, say 3000 feet, as at Gulran in the Badghis, it was more of a shrub. In a climate with a severe winter, such as Khusan, it loses all its leaves at once; in Sind, on the Indus, these fall off irregularly

throughout the winter. Under protection, and in a suitable locality, it grows to a great size in bulk, but never to any height, as at Nushki, where I measured several trees, which at 6 feet from the ground were 9 feet 6 inches in girth. At Maidiabad I saw two superb trees on the 1st September 1885, giving splendid shade, and under one of these a large school was being conducted. The wood is considered useless except for fuel; owing to its extreme lightness it makes excellent rafts. The leaves are good fodder for camels and goats, which browse on them whenever they have the opportunity. In the desert country of Baluchistan it was cultivated at some of the shrines.

Populus nigra, *Linn.*, var. PYRAMIDALIS. SALICINEÆ.

The Lombardy, or Black Poplar, *safeda, safedār, kabuda.* I only met with this tree cultivated in orchards and near houses. At Nasarabad, on the 4th September 1885, I saw a garden laid out with these trees exactly as are the great *bāghs* in Kashmir, only this was a small garden making a great attempt at something fine and historical. The wood is considered good for beams for roofing purposes, and is employed in the manufacture of boxes for packing fruit in, especially for those used in transmitting fresh grapes to India.

PORCUPINE—HYSTRIX species.

Pōsh—پوش—a covering, a mantle, a garment, the bark of a tree.

Pōshāk—پوشاک—clothes, garments.

Pōsh-e-khām, or *pash-e-khām.*

This is said to be a tree cultivated at Kala-nao, Maimana, and Panjdeh. On breaking up the fruit a gum is obtained called *zuft;* this is used in medicine, being spread on paper like a plaster, and applied over the part of the body where the patient suffers pain. On burning, the *zuft* gives out a strong pleasant odour. The above is all the information I could obtain regarding this tree. *Zuft,* of course, is a resin, and the tree may be a Pine, but my informant would not have it so, and as he was usually very accurate in his information I merely note his statements. As the tree is a cultivated

one, and is said not to grow wild in these regions, a specimen should not be difficult to get. The same native names are applied to an Elm, ULMUS species, but of course its fruit does not yield a gummy substance of any sort; it is, however, a cultivated tree in the regions above mentioned.

Pōsh-e-kār—[the bark (used) in work], *posh-e-kham*; the Elm, ULMUS species.

Pōst—پوست—an external covering; the skin, bark, shell.

Pōst-i-ānār — the rind of the fruit of PUNICA GRANATUM.

Pōst-i-gurba-dala—the skin of the MARTEN.

Pōst-i-jouz—the rind, or bark, of the Walnut fruit, or of the tree JUGLANS REGIA.

Pōst-i-kōknār—Poppyheads, PAPAVER SOMNIFERUM.

Pōst-i-līmon—the dried skins of Lemons, CITRUS MEDICA, var.

Pōst-i-nauringj—the dried skins of Oranges, CITRUS AURANTIUM.

Pōst-i-pishak—cat-skins.

Pōst-i-rōba—fox-skins.

Pōst-i-sīa-ling—the root bark of PRUNUS CALYCOSUS.

Pōst-i-shākh—the root bark of the Maple, ACER species.

Pōst-i-gī—cream.

Pōstīn—پوستین—

A fur garment. A coat made of the skin of a sheep, the skin being tanned with the wool on. An immense trade is done between Afghanistan and the surrounding countries, especially with the frontier of India, in these furs. The great centres of their manufacture and preparation are Kabul, Kandahar, and Herat.

POTASH—*īshnān* (Arabic).

Prangos pabularia, *Lindl.* UMBELLIFERÆ.

The Prangos of Ladakh, *bādīan-kohī*. A very common plant in the Badghis, growing in great clusters on the

northern slopes of the hills, at an altitude of 3000 feet and above, considered excellent fodder for goats and sheep.

Prosopis Stephaniana, *Spreng.* LEGUMINOSÆ.

Chigak, chogak, khār, khār-i-jinjak ; the fruit, or galled fruit, *kechī, kechī, jinjak, jing-jing-banu ;* the seeds, *tukhm-i-jīnjak ;* the dye, *zang-o-wach.* A somewhat woody shrub, usually about 4 feet in height, occasionally up to 12 feet (I never saw it more), forms a more or less dense scrub, and is extremely common from Quetta to Bala-Morghab, over the whole district traversed to an altitude of a little over 2000 feet. Is a nasty weed in cultivation. It gives excellent browsing to camels, goats, and sheep, who all feed greedily on it. The pods are commonly affected by a gall, which distorts them greatly, making them bloated and irregular in form, and causing them to take on a red copper colour. These are collected both for local use and for exportation to be employed in dyeing and tanning; they yield a light yellow dye. The seeds are employed in local medicine.

PRUNE—Dried Plums, the dried fruit of PRUNUS species.

Prunus Amygdalus, *Baill.* ROSACEÆ.

The Almond, *bādām, bedām.* At Meshad the Almond was cultivated freely in the gardens, but nowhere else did I meet with more than one or two bushes at a time. The great place whence almonds are imported into these parts, to be further exported, is Shakh-i-shai-mardan, and from Anardara. Around Herat, the shrub is cultivated, but not in sufficiency for the large export of fruit that takes place. The sweet kernels of a variety of the Nectarine are often employed as a substitute for the Sweet Almond. Throughout Afghanistan, not so noticeable in Persia, the priests carry a rod or staff of the almond as a sort of emblem; these rods, with those of the Tamarisk, are made into handles or hafts for whips, as a protection against snakes.

Prunus Armeniaca, *Linn.* ROSACEÆ.

The Apricot, *zard-ālu ;* the dried flesh, *astak, ashtak, kishta, kashta, khōbanī, khubanī ;* dried unripe apricots, *ākhkuk ;* grafted, *zard-ālu-pewandī ;* the gum, *shilim-i-zard-ālu ;* the

oil, *rōghan-i-zard-ālu.* This tree, with the Mulberry Plum and Elæagnus, is one of the commonest to be met with in all gardens and orchards, usually self-sown, rarely raised by grafts. The fruit is small and very poor in quality; it is eaten in a dried state, and the dried fruit is often cooked along with other food. It is generally collected when ripe, the stone removed, and the flesh dried in the sun; sometimes the almonds are made to replace the stones, or sweet almonds put in their place. An immense export trade is done towards India and to Southern Persia in the dried flesh of the apricot, which in Persia is usually called *kashta,* and *ashtak,* in India *khubanī;* by the latter word in Persia is understood a cooked apricot. Sometimes they are collected in an unripe state; these are also eaten, but usually these are exported for the use of silversmiths, who clean silver by boiling it amongst a decoction of the unripe fruit. The tree yields a gum in some quantity; this is collected, and along with that of the plum and almond is employed in the arts. The wood is considered hard, and when procurable is employed in the manufacture of farm implements.

It is not an Apricot that has a sweet kernel, as stated in error by me in *Linn. Soc. Trans.*, vol. iii. part i. p. 61, but a Nectarine.

Prunus avium, see variety *a* of PRUNUS CERASUS, *Linn.*

Prunus brahuicus, *Aitch. et Hemsley.* ROSACEÆ, and
Prunus eburnea, *Aitch. et Hemsley.* ROSACEÆ.

These two shrubs, *āol, āul, āwal,* are very similar in appearance and habit; they grow from 4 to 12 feet in height, forming copses; over the dry, arid, stony districts, at an altitude above 2000 feet, are recognized for the excellent quality of their wood for fuel, and for its manufacture into charcoal. The name *āol,* means a spine, or spinous, and is well applied to these shrubs.

Prunus calycosus, *Aitch. et Hemsley.* ROSACEÆ.

Sīa-ling, karmāk. A shrub, or small tree, common in the Badghis at an elevation of 3000 feet altitude. The bark is very like that of a cherry, but naturally much darker in colour, hence the name *sīa-ling* [black-limb]. Owing to this deep colouring of the bark the stems are much sought after

for staves. The bark of the root is employed as a dye-stuff, being crushed, and boiled in water. It is employed to colour leather a dark, or maroon red. Some say the fruit when ripe resembles a cherry, others that it is like a small plum. I did not collect ripe specimens.

Prunus Cerasus, *Linn.* ROSACEÆ.

Variety *a* (*Brandis. For. Flora*, p. 193), PRUNUS AVIUM, *Linn.* The sweet-cherry, *gīlās;* Arabic, *kīrās.* A small cultivated tree, not so common as the next, raised by grafts only, yielding a fruit resembling our sweet white-heart cherry, quite as fine, and very similar to the fruit of the same name cultivated in Kashmir. There can be no doubt, I think, that the name *gīlās* is a corruption for the Arabic *kīrās,* from the Greek *kerasion,* which would point to this cultivated form having been carried east, from Greece, to Arabia, Persia, Afghanistan, and Kashmir.

Variety *b* (*Brandis. For. Flora*, p. 193), PRUNUS CERASUS, *Linn.* The sour, or bitter cherry. The tree, *gurja*; the fruit, *ālu-bālu.* A small cultivated tree, common in all orchards, said to be raised from the seed only, not grafted. It has a bitter harsh fruit, which when ripe becomes almost black in colour, and is as large as our largest cherries. The fruit is not much eaten whilst fresh, but is dried, the stones being removed, when it is rather nice, though astringent; this dried fruit is largely exported into Persia, a very little to Afghanistan. I never met with it as an import into India. The dried fruit is considered an excellent remedy to wounds.

Prunus divaricata, *Ledeb.* ROSACEÆ.
And other species.

A Plum, *ālu, ālucha, gurja, gurda*; the dried fruit or Prune, *ālu-bokhāra;* this last name is also, but not commonly applied to the fresh fruit. The plum is cultivated in all orchards, usually by scions or self-sown seed, and not ordinarily from grafts, hence the ordinary fruit is very poor, and austere to the taste. The better sorts of fruit raised by grafting are called *gurja, gurda;* there are many varieties of these, and some very fine, one especially, a very deeply-coloured almost black variety, called *ālu-sīa.* Meshad is now as much celebrated as Bokhara used to be for its plums, and there is

here an immense trade done in dried plums or prunes, called *ālu-bokhāra*, exported to Southern Persia, Afghanistan, and India, some even to Turkistan by the way of Maimana. These are used in the ordinary diet of the better classes, usually mixed amongst the flesh of dried apricots.

Prunus eburnea, *Aitch. et Hemsley.* ROSACEÆ.
See PRUNUS BRAHUICUS, *āol*, *āul*, *āwal*.

Prunus persica, *Benth. et Hook. fil.* ROSACEÆ.

The Peach, *shaft-ālu*, *tō*, *tōr*; Teheran, *hulu*. The Nectarine, as far as I can remember or noted, came under the same names, but a nectarine with a sweet kernel was called *shaftarang*, and the kernels *kashta-shīrīn*, this I have no doubt was the same fruit as in Ladakh is called *raktha-karpo* (*Trade Products of Leh*, p. 61). A small tree, cultivated extensively at Herat and Meshad for its fruit, not in any quantity in the gardens of the other towns through which I passed; of course, of Herat I can only speak from hearsay. The finer varieties of the fruit are raised from grafts, and these were very fine at Meshad; to this is given the name *shaft-ālu*, meaning the beautiful plum. There is a very ordinary fruit, in external appearance resembling in form and colouring the fruit of PRUNUS AMYGDALUS, the almond, only almost as large as the ordinary peach; this originates from self-sown seeds, and is not grafted; it is called *tō*, or *tōr*, which means a sweetheart, beloved. In Teheran, the fine Peach is called *hulu*, which is an Arabic word meaning sweet, pleasant to the taste or eye. The name *āru* is a Hindustani corruption for *ālu*. I never heard it, nor did any one know of it in these districts as a name for the peach.

The fruit of the peach, when ripe, cannot be conveyed, so that it is not an export article; the unripe fruit—both peaches and nectarines—are dried for exportation, but even this is said not to carry well. De Candolle (*Origin of Cultivated Plants*, p. 223, Eng. trans., 1884), in speaking of the indigenous peach says: "Pallas saw several on the banks of the Terek, where the inhabitants give it a name which he calls Persian *scheptata*." This name is no doubt *shafta-ta*, the beautiful luscious one (*shafta*, beautiful; *ta* or *tar*, green, moist, luscious). And again, at page 223, he gives *tao* as a Chinese name, which may be from the Persian *ta*,

tar, or from *tō*, *tōr*, the latter meaning sweetheart, beloved, a peach; as *kōh-tōr* the name for STOCKSIA, and for LYCIUM, translated by the natives as "Hill-peach," whereas the translation should more literally be the "Beloved of the Mountains." This, I think, ought to lead us back from China towards Persia or Central Asia, if language will help to do it, as to the locality of the origin of the Peach. Royle gives *āru* as the general name for Peach in Persia; this, as I have already stated, is a Hindustani corruption for *ālu*, and in North-West India the Peach is known as *āru*, and the Nectarine as *mundla-āru* [the shaven or shorn Peach]. At Peshawur, the Peach is as often called by the Persian name *shaft-ālu*. The *kulloo* of Royle is in all likelihood a misprint for *hulu*, the Teheran name.

Psammogeton setifolium, *Boiss.* UMBELLIFERÆ.

Khār-a-bōīa, *khār-a-bīa*. A very common herb all over the country, well known for its fruit, which is much gathered as an aromatic flavouring, and employed in medicine. It is said to be common at Koin, and Birjand. It obtains its name, "the thorny scented," from the stiff sharp hairs that cover the aromatic fruit.

Pteropyrum Aucheri, *Jaub. et Spach.* POLYGONACEÆ.

Khar-whang-khush. A common shrub, in the arid tracts, easily noticed from the brilliancy of its almost scarlet fruit. Is considered a favourite fodder with the donkey; hence its name.

Pul—پول—a bridge.

PULLEY—*chambāra*, *charkh*.

Pieces of the stems of various shrubs are bent into a loop, and attached by carriers to their ropes; these wooden loops act as pullies in tightening the ropes whilst lading beasts of burden. They are of immense assistance for the purpose to which they are applied, and are therefore to be found for sale in all bazaars. The best are considered to be made from the stems of COTONEASTER NUMMULARIA, or of the roots of ZIZYPHUS VULGARIS.

PULSE—

The seeds of several species of the LEGUMINOSÆ are found

for sale in the bazaars of all the villages, being much used in the diet of the natives mixed with other food-stuffs. The following plants are cultivated throughout the country to yield the various kinds of pulse:—The Field-bean, VICIA FABA; the Haricot or French bean, PHASEOLUS VULGARIS; PHASEOLUS MUNGO; and the field-pea, PISUM SATIVUM. It was only in Khorasan, and at an elevation of 3000 feet and upwards, that I met with the following being cultivated:—The Gram of the Punjab, CICER ARIETINUM; the Lentil, LENS ESCULENTA; the Vetch, VICIA ERVILIA; and the Chickling-Vetch, LATHYRUS SATIVUS. In most cases these were grown without irrigation, but a good crop was dependant upon the sufficiency of the dew-fall.

The Field-bean was conspicuous wherever it was grown, from being cultivated in strips round the margins of fields of cotton. These beans are usually eaten by the Afghans cooked with meat; the flour is never used for bread, being considered as too heating a diet, but goats and sheep are fed on it. The pulse of LATHYRUS SATIVUS was not known to be productive of injury to health, but I was told that a pea, called *langash*, which I did not meet with, was conducive to sickness.

Pulūsh—COUSINIA species. The leaves are employed in making tinder.

PUMPKIN—CUCURBITA PEPO (?).

Punica Granatum, *Linn.* LYTHRARIEÆ.

The Pomegranate, and fruit, *ānār;* the flower, *gul-nār;* the rind of the fruit, *pōst-ānār, nāspāl;* the dye, *rang-i-pōst-ānār;* the Punjabi for the indigenous shrub, *dāru, dārim;* Salt-range, *durunī;* Kuram Valley, *wāngar.* On this journey I only met with the cultivated shrub, which was common in the orchards. The natives told me that the indigenous plant existed in the hills near Anar-dara; it is well known in Baluchistan, and passes eastwards along the Suliman range to the Kuram Valley, where I collected it. In the lower outer hills it is met with along the whole of our frontier, from Kohat to Abbotabad, the Salt-range, Rawulpindi into Kashmir, along the banks of the Jhelum river, Jamu, in the arid outer hills below Simla, whence it extends into Kamaon. De Candolle, in his *Origin of Cultivated Plants*, p. 238, Eng.

edition, 1884, doubts its being indigenous in Baluchistan where Stocks found it, and also states that "Anglo-Indian botanists do not allow it to be indigenous east of the Indus." He must have overlooked the *Forest Flora of North-west and Central India*, p. 241, 1874, and probably was misled by the account of its distribution as given in *Flora Indica*, pt. v. p. 581, 1879. Thomson considered it indigenous as far east as Kamaon. In the trade the small Pomegranates are *ānār-dāna*, whereas the cultivated fruit is always *ānār*.

The gardens of Anar-dara are celebrated for the very fine pomegranates they yield; the finest are as large as a child's head, with a very thin papery rind, and an almost seedless grain. These are exported in immense quantities to Afghanistan, India, and Persia. The rind of the fruit is employed in dyeing and tanning leather, for which purpose the poor unripe cultivated fruit, or much more largely the fruit of the indigenous shrub, is collected.

Pur—پور—steel.
Purze—tinder.
Pusht—پشت—the back.
Puz—پوز—or *buz*—the snout of an animal.
Puza—پوزه—wool; the pile of cloth; the down upon leaves.

Pyrus communis, *Linn.* Rosaceæ.

The Pear, or its fruit *,āmrud;* a grafted variety of the fruit, *nāspatī, nāshpātī, nāk.* The pear is commonly cultivated in all orchards for its fruit; this is usually poor in quality, owing to the tree being raised either from scions, or self-sown. The grafted trees, which are met with in the better class of orchards, bear a large variety of the fruit; this is said to be much more common to the east of Herat, from whence great quantities of the fruit are exported. At Meshad some of the pears were very fine, and well worth the notice of our gardeners.

Pyrus, species. Rosaceæ.

An indigenous pear, is called *āmrucha*, from its yielding a smaller fruit than the cultivated garden tree does. This small fruit is collected, dried, and made into flour to be mixed

with ordinary flour for making bread. In the Badghis, on December 6, 1884, between Palounda and Karezdara, I saw a clump of pear trees growing apparently as if indigenous; amongst those hills in similar localities they are said to be common. The wood of the indigenous tree is valued for the construction of cotton-gins.

Pyrus Cydonia, *Linn.* ROSACEÆ.

The Quince, *bhī, bhiī;* the seeds, *bhī-dāna, bhiī-dāna.* Cultivated in all gardens, usually the fruit was poor, but in exceptional cases very fine and large; the latter were said to have been grown from grafts. At Meshad the Quince is grown in great profusion and of very fine quality. It is a fruit that stands carriage well, and hence is largely exported to India and Southern Persia. The seeds are commonly employed for yielding a gum for dressing the hair.

Pyrus Malus, *Linn.* ROSACEÆ.

The Apple, *seb, sib;* dried sour apples, *kashta-seb-i-tursh.* Is a cultivated tree in the better class of orchards. Immense quantities of apples are raised in Persia, from whence they are exported to Herat for further exportation. The district round Herat does not produce such fine apples, or in the quantities that they are grown in Persia. There are two marked kinds, the sweet and the sour, the former are eaten fresh, the latter are usually dried and are cooked to be eaten with various foods; these are largely exported to Southern Persia, in smaller quantities to Afghanistan. The natives say that in the hills of the Paropamissus range, at its eastern extremity, a wild apple is common.

Quercus, species. CUPULIFERÆ.

The Oak, *balut.* The galls of an Oak, called *māju,* are imported from other districts of Persia for dyeing and tanning with. Over the country I traversed I did not come across any oaks, nor did I hear of any existing in those parts.

QUINCE—the fruit of PYRUS CYDONIA.

RADISH—the root of RAPHANUS SATIVUS.

RAISINS—the dried fruit of the Vine, VITIS VINIFERA.

There are several kinds: *kishmish,* these are small and

seedless usually green in colour, sometimes red; when green they are known as *sabz*, and when red as *surkh*. *Manaka* are like our ordinary raisins, of a red colour, and contain seeds. *Zīriskh* are like currants or corinths, they require to be distinguished from the dried fruit of BERBERIS, and hence are called *shīrīn*, in contradistinction to the BERBERIS fruit, which is called *zīrishk-tursh*. Herat and its vicinity yield immense quantities of raisins, which are exported to India, some to Turkistan. From raisins the natives prepare a strong spirit, *arak*; this is locally consumed.

Rānā—عنا—beautiful.

Randu, *randuk* — the name in Baluchistan for SALSOLA ARBUSCULA.

Rang—رنگ—colour, dye-stuff.

RAPE — BRASSICA CAMPESTRIS, *Linn.*, sub-species NAPUS.

Ranj—رنج—colic, twisting of the bowels, grief.

Raphanus sativus, *Linn.* CRUCIFERÆ.

The Radish, *turb*, *thurb*; Hindustani, *mulī*. A very large white-rooted variety is commonly cultivated in all gardens, and is much valued as a vegetable when cooked. This, when boiled (the usual way of cooking this vegetable by the Pathans and Afghans), gives forth the most horrid and unbearable stench to a European nostril, but these people seem to appreciate it.

Rasan—رسن—*rasmān*—رسمان—*razmān*, *rīsmān*—rope, cord, string, thread.

Rasmān-ālafī—rope made from the grass, ERIANTHUS RAVENNÆ.

Rawīsh—رویش—a sprout, a shoot.

Raz—ز—*riz*—grapes, poison.

Re, *rī*—ریه—a salt that effloresces from the soil.

RED—*surkh*, *lāl*.

RED-PEPPER—CAPSICUM species.

REEDS — *nāl*, *nāī*—ARUNDO DONAX, PHRAGMITES COMMUNIS, ERIANTHUS RAVENNÆ, and ERIANTHUS species.

RENNET—*panīr-māīa*; a substitute for rennet, *māīa-shīr.*

Resh, rīsh—ریش—the beard, applied to the roots of a plant.

Resha, rīsha—ریشه—a fringe, fibres, the roots of a tree.

Resha-khatmī—roots of ALTHÆA LAVATERÆFLORA employed in medicine.

Resha-i-gul—roots of MIRABILIS JALIPA.

Resham—ریشم—silk.

Resham-i-khāmak—raw-silk.

Reshmī—ریشمی—silken.

RESIN—*zaft, zift, zuft.*

No pine-resin is a product of the country I travelled over, but under the name *anzrud* is imported into Herat and Meshad a true pine-resin from other parts of Afghanistan and India. A substance called *zuft* is said to be obtained from a cultivated tree called *pōsh-i-khām*, which grows at Maimana, Kalanao, and Panjdeh. The resinous dust of CANNABIS SATIVA is *chars, charas,* and is imported as an intoxicant.

Rewand—ریوند—Rhubarb, RHEUM species.

Rewand-i-chīnī—ریوند چینی—the medicinal Rhubarb root from China, RHEUM species.

Rewand-chukrī—the edible indigenous Rhubarb, RHEUM RIBES.

Rewand-i-dewāna—[Fools'-Rhubarb], RHEUM TATARICUM.

Rewand-i-megān — [the ruby-coloured Rhubarb] RHEUM TATARICUM.

Rewās, rīwās—ریواس—the edible Rhubarb, RHEUM RIBES.

Rewāsh, rewāshk—[from *rawīsh*, a sprout, a shoot]; the edible Rhubarb, RHEUM RIBES.

Rewāsh-i-dewāna—[Fools'-Rhubarb], RHEUM TATARICUM.

Rheum Ribes, *Gronov.* POLYGONACEÆ.

The edible rhubarb, *rewand, rewand-chukrī, chukrī, rewās, rīwās, rewāsh, rewāshk.* Indigenous all over the moister localities from 3000 feet and upwards, occurring in great expanses, over wet clay soil, on a northern exposure, on the Paropamissus range and the higher hills in Khorasan, marking the country most characteristically in the autumn with the brilliancy of its almost scarlet foliage. The natives are very fond of collecting and eating raw the young shoots of the flowering stems, not the leaf-stalks; they surround the sprouting stems with stones, to blanch them as well as to protect them from the goats and sheep, until they have grown large enough to be worth collecting to eat. The root-stock is employed in dyeing leather of a red colour.

Rheum, *species.* POLYGONACEÆ.

The medicinal rhubarb, *rewand-i-chīnī,* is imported in some quantity from China through Turkistan.

Rheum tataricum, *Linn.* POLYGONACEÆ.

Fools'-rhubarb, *rewand-i-dewāna, rewāsh-i-dewāna, rewand-i-megān; ishkīn* (Turkomani). This grows on the great alluvial plains of the valley of the Hari-rud to the north of Tir-pul, at an altitude of 2000 feet. From the great size of its two or three base leaves, which lie expanded flat against the ground, somewhat resembling VICTORIA REGIA leaves without the up-curled margin, it forms a marked object on the plain, more especially when its fruiting-stem is covered with the most brilliant ruby-coloured fruit, from which it receives one of its names. The fruit and the root-stock are both collected to be employed in medicine; the decoction of the fruit is considered a more powerful purgative than that of the root-stock.

RHUBARB, CHINESE—RHEUM species.
RHUBARB, EDIBLE—RHEUM RIBES.
RHUBARB, FOOLS'—RHEUM TATARICUM.

Rhus Coriaria, *Linn.* ANACARDIACEÆ.

The Sumach, *samagh, samāghk, sumāghk, sumagh.* A cultivated tree in Khorasan and Western Afghanistan orchards,

and said to be cultivated throughout Central Asia for its leaves, which are greatly used in dyeing, especially in dyeing silks. The leaves as sold in the bazaars are called *barg-a-sumāghk.* Can it be this tree that is called *posh-i-khām,* and yields *zuft* at Maimana?

RICE—the plant ORYZA SATIVA, and its grain.

Ricinus communis, *Linn.* EUPHORBIACEÆ.

The Castor Oil plant, *bed-anjīr, baz-anjīr.* Cultivated throughout the country, round the margin of cotton, tobacco, or melon fields, for its seed, from which the chief oil for burning is obtained, *rōghan-i-baz-anjīr.* Imported "cold drawn" castor oil is well known as a medicine, and so are the seeds of a Croton, but neither the local oil nor the seeds of this plant are employed as medicine. Indeed, the people would never admit that the oil could be of use as a drug except at Hosenabad. Household tapers, *maluk,* are made by crushing the seeds along with raw cotton wool until the oil is expressed, and then rolling the cotton laden with oil into the form of tapers; these are made, as required, for household use.

Rīsmān—ریسمان—*rasman*—رسمان—*razmān*—a rope, twine, and string.

RIVER—*rud, darīa.*

Rīwās—ریواس—RHEUM RIBES, the edible rhubarb.

Riz, raz—رز—grapes, poison.

Rob — رب — *rōb, rub* — juice, syrup, inspissated juice.

Rob-al-sus—رب السوس—*rob-a-sus*—[the syrup of the root], liquorice, the extract made from the roots of GLYCYRRHIZA GLABRA.

Roba, ruba—ربا—robbing, stealing, carrying off.

Rōbā—روباه—*rōba*—روبه—a fox, VULPES species.

Rōdan—رودن—*rōdang*—رودنگ—madder, the plant and dye-stuff of RUBIA TINCTORUM.

Rœmeria hybrida, *D'C.* PAPAVERACEÆ.

Lāla-dukhtar, shatīra. The seeds of this poppy are employed in medicine.

Rōghan—روغن—oil, butter, grease, pitch.
Rōghan-i-gāo—[cow-oil], *rōghan-i-zard* — [yellow-oil], clarified butter, the *ghī* of Hindustan.
Rōghan-sīa — [black-oil], pitch, tar — artificially prepared.
Rōj-gard, for *rōz-gard*—[the day turning], EUPHORBIA CHEIROLEPIS.
ROOT—*āgar*, *asal*, *bekh*, *ban*, *bun*, *golī*, *ībrang*, *mahk*, *resh*, *resha*, *sus*, *shāk*, *shākh*; of the teeth, *ārī*.
ROPE—*rasmān*, *razmān*, *rīsmān*, *rassan*.

The ordinary rope or twine of the country is made of goats' or camels' hair, that made of sheep's wool is less common. These materials, although they do not make as strong ropes as vegetable fibres, are on the whole much more suitable in this climate for tying on loads to animals. The Turkomans manufacture rope from the fibres of APOCYNUM VENETUM, CANNABIS SATIVA, and ERIANTHUS RAVENNÆ. Where we would employ twine for tying up small bundles, and other such small requirements, the people of these parts employ the root bark of several species of ASTRAGALUS for the purposes required, as also the bark from the annual shoots of the Elm, ULMUS species.

Rosa Beggeriana, *Schrenk.* ROSACEÆ.
Sag-zahr, [the dog-rose].

Rosa berberifolia, *Dumont.* ROSACEÆ.
Kalura, so called in all probability from its becoming exposed to the notice of the gleaners when the crop is being collected, as it is a common weed in corn-fields.

Rosa damascena, *Mill.* ROSACEÆ.
The Damask Rose, *gul*, *gulāb*. This is the ordinary rose that is found cultivated in all gardens, generally one or two large bushes in each. It is grown in great quantity at Meshad, and Turbat-i-Haidri, and wherever there is a large town with abundance of water for liberal irrigation. In Persia this is the flower of all flowers in beauty and scent,

it however lasts too short a time, owing to the hot winds, as they at once put an end to all its beauty. Wherever it is grown, or in however small a quantity, the flowers are daily collected by the owners of each garden, and handed over to the distiller, who manufactures from them rose-water, *gulāb*. Rose-water is a luxury which the very poorest of the Persian ladies and dandies cannot do without; in almost the smallest village it is to be procured.

Rosa lutea, *Mill.* ROSACEÆ.

The single-flowered Yellow Rose, the Persian Yellow Rose of our gardens, *gul-i-rānā, gul-i-rānān-zebā*. A cultivated shrub in gardens.

Rosa moschata, *Mill.* ROSACEÆ.

Gul-nastaran, or *gul-nastran.* The climbing White Rose of the Punjab Himalaya, so well known to the dwellers at Muree and Simla. On this journey, I only met with it as a cultivated plant in the vicinity of shrines.

ROSE—the flower and shrub of ROSA species, *gul, gulāb, zahr, sag-zahr, kalura, gul-i-rānā, gul-nastran.*

ROSE-WATER—*gulāb.*

Manufactured in every hamlet from the flowers of ROSA DAMASCENA, the Damask Rose. From the larger towns, as Meshad and Herat, there may be some trade in the commodity.

Rōz—روز—the day.

Rōz-gard—روزگرد—*roj-gard*—[the day turning], the sun; turning of the day; applied to certain flowers; EUPHORBIA CHEIROLEPIS.

Ruba, roba—ربا—robbing, stealing, carrying off.

RUBEFACIENT—the tubers of the roots of EREMOSTACHYS LABIOSA, and other species, and the tubers of CURCUMA LONGA are so employed.

Rubia tinctorum, *Linn.* RUBIACEÆ.

Madder, *rōdan, rōdang;* the Peshawur and Indian trade terms, *manjīth, majīth, majīt.* This valuable dye-stuff is

cultivated throughout this country in orchards, under the shade of trees, and where irrigation is plentiful; the plant takes three years before it can yield the proper size of root to be considered a good marketable commodity. The cultivating of the plant in orchards is said rather to improve the bearing of the trees than cause them injury; the fact is, to get a good crop of madder the soil requires to be well manured and most liberally irrigated, thus the fruit trees benefit as well as the madder. The finest is said to be cultivated at Anar-dara, Koin, and Yezd, from whence the roots are imported in immense quantities to Herat. At Herat a good deal is also produced, but not of such a fine quality. From Herat it is re-exported in all directions, a great deal to Afghan proper and India, besides in some bulk to Turkistan.

Rubus discolor, *Weike. et Nees.* ROSACEÆ, and
Rubus cæsius, *Linn.* ROSACEÆ.

These two species of Bramble, *balourī, malourī, zīl-khār,* are very common shrubs at an altitude of 3000 feet, in rocky country, by the sides of streams. Their roots are collected to be employed in producing a brown dye for wool, and the fruit is much sought after.

Rud—رود—a river.
RUE, WILD—PEGANUM HARMALA.
Rukh—روخ—the name of a plant.

Rumex, species. POLYGONACEÆ.

The Dock, or Docken, *ishkhun, turshak.* The stems of this plant are employed in making tinder; these are browned over a fire, the browned coating is scraped off, and this makes the tinder. I found a RUMEX similarly employed in Ladak and Kashmir.

Rumī—رومی—Turkish.
RUSH—JUNCUS MARITIMUS.
RYE—SECALE CEREALE.

Sabad—سبد—*sabat*—a strainer made of basket-work, a basket.
Sabcha—the gourd of BENINCASIA CERIFERA, much eaten as a vegetable.

Sābun—صابون—soap.
Sabz—سبز—green.
Sabza—سبزه—pot-herbs, vegetables.
Sabzī—سبزي—verdure, green, Turki for the carrot, DAUCUS CAROTA.
Safed—سفيد—white.
Safeda—سفيده—and *safedār*—سفيدار—the Lombardy or Black Poplar, POPULUS NIGRA.
SAFFLOWER—CARTHAMUS TINCTORIUS.
SAFFRON—the stigmata of CROCUS SATIVA.
Safī—a sieve or strainer made of basket-work, the shape of a large spoon or ladle.
Sag—سگ—a dog.
Sag-ābī—سگ ابي—[water-dog], an Otter, LUTRA species.
Sag-mār—[dog-snake], a Lizard.
Sag-zahr—[dog-rose], ROSA BEGGERIANA.
Saīad—صيد—game, prey. In Baluchistan the Gazelle.
Sāk—ساق—Arabic, the trunk of a tree. In Hindustani the name for the bark of the ACACIA ARABICA.
Sak-bīna—سكبينه—[the gum of the (tree) trunk]. Gum-arabic.
Sāla—ساله—age, years.
Sālab—ثعلب—*sālub*, *sālap*, or *sālup*—a fox, the tubers of an ORCHIS species, Salep (Anglo-Arabic).
Sālab-misrī—ثعلب مصري—[Egyptian Salep].
SAL-AMMONIAC—Chloride of ammonium.
Salātīn—سلاطين—kings, princes.
SALEP—Anglo-Arabic from *sālab* or *sālap*, the tubers of an ORCHIS.

Salix, *species.* SALICINEÆ.

The Willow, *bed*, *bīd*, *majnu*, *majnun*, by the Baluchis *get*. SALIX PYCNOSTACHYA, *Anders.*, and SALIX ACMOPHYLLA,

Boiss., occur only as indigenous shrubs or small trees at an elevation of 3000 feet and upwards near running water.

SALIX BABYLONICA, *Linn.*, is a large indigenous and cultivated tree. SALIX DAVIESII, *Boiss.*, is a cultivated tree. SALIX ALBA, *Linn.*, is a large tall tree cultivated near villages, called *bed-i-sīa*, owing to the dark colouring of its bark. SALIX SONGARICA, *Ands.*, is also a cultivated tree near villages called *bed-i-surkh*, owing to the red colouring of its bark. The cultivated trees attain great girth; although whilst young they may be tall, they soon loose their stature owing to the high winds, and their boughs easily breaking off, besides whilst young most of them are kept in a continuous state of pollard, from cattle being fed in early spring upon their young branches and shoots. They are all cultivated, if water is at hand, for the rapidity of their growth, which gives early shelter and shade, besides for the value of their wood, which, though not much thought of for roofing purposes, as it is easily destroyed by white ants, comes largely into use for doors, lintels, spinning wheels, making dishes, platters, lids for the large iron cooking pots which are so much in vogue in this country, for spoons, for the manufacture of charcoal, for gunpowder, and as fuel, and divides the honour of being used in making the boxes for packing grapes for exportation to India with POPULUS NIGRA. The stems of young trees are employed to make the handles of their chief agricultural weapon, a kind of spade-shovel, the handle of which has to be fully 5 feet in length, requiring lightness and strength; or these are bent into shape to make the wooden supports employed in the roofing of the *kabitka*, or nomad hut. The branches and annual shoots are used in the manufacture of basket-work, whether for the construction of the walls of houses, supporting irrigation channels, or for basket-work in general, and in early spring cattle are fed on the young blossoming shoots.

SALIX CAPREA, Linn. (?) (at least I suppose it is this plant), is cultivated at Herat, for the scent distilled from its flowers; it is called *majnu*, and *bed-mushk*.

SALSAFY—

That cultivated as a vegetable in England is TRAGOPOGON

PORRIFOLIUS. The indigenous TRAGOPOGON COLORATUM is used as a vegetable here.

Salsola arbuscula, *Pall.* CHENOPODIACEÆ.

The Brahui name for this shrub is *narak, naruk;* the Baluchi, *randu, randuk.* A very common shrub in the Baluchistan desert country, often 4 feet in height, at once distinguished by its peculiarly striped bark, marked with longitudinal stripes of white, the darker outer layer of bark splitting, showing the inner lighter coloured tissues, as if the outer bark was too tight for the growing shrub. It is considered excellent camel fodder, and is employed in the tanning and preparing of skin bottles for holding water, which are a great necessity in this desert country; it is also used for the manufacture of Barilla.

Salsola Auricula, *Mog.* CHENOPODIACEÆ.

Gulmaī, yields Barilla.

Salsola fœtida, *Del.* CHENOPODIACEÆ.

Saltwort, *shōra, shōrag, shōre.* This is a common shrub over the saline plains of the desert country from Quetta to the Hari-rud. It is burnt to obtain Barilla, *khār, ishkhār.* At Sha-ishmail, on the 28th October 1884, I obtained from the surface of its leaves a quantity of manna, which presented the appearance of drops of milk that had hardened on its foliage; this seemed to be well known to the Baluchi camel drivers, who collected and ate it. The only name they had for the substance was *shakar* (sugar).

SALT, common salt, CHLORIDE OF SODIUM.

SALT-MINE, or salt-pits, or salt-fields, *kan, kanī, namak-sār.*

SALTPETRE—NITRE, NITRATE OF POTASH.

Salts.

of ARSENIC; of COPPER; of LEAD; of ZINC.
ALUM.
BIBORATE OF SODA, Borax.
CHLORIDE OF AMMONIUM, Sal-ammoniac.
CHLORIDE OF SODIUM, common salt.
NITRATE OF POTASH, Nitre, Saltpetre.

SALTWORT—species of Salsola.

Salvia ceratophylla, *Linn.* LABIATÆ.

Is said to be employed in medicine; the leaves are strongly lemon scented.

Salvia (?) *species.*

The seeds employed in medicine called *kanoucha, kanouncha.*

Samagh — صمغ — *samāghk* — the Sumach, RHUS CORIARIA.

Samār—سمار—a herb.

Samārākh, samārukh—سمارخ—[*samār-rukh*].

An OROBANCHE, that springs from the roots of the Umbellifer PYCNOCYCLA AUCHERIANA. The term is applied to other species of OROBANCHE, and to a large FUNGUS that breaks open the soil in the same fashion as the Orobanche flowering head does.

Sambal—سمبل—*sanbal*—سنبل—*sumbal*—

Is a scented root-stock, and these names should, correctly speaking, be applied to that of FERULA SUMBUL; in this country it is applied to that of FERULA SUAVEOLENS, which is merely a substitute for the former, as it loses its scent on drying.

Sambal-ultīb—*sanbal-ultīb*—سنبل الطيب—*sanbal-al-latīb*—سنبل الطيب—[the musk-scented *sambal*].

In these localities, and in this trade, this term is applied to the root-stock of VALERIANA WALLICHIANA; but to speak more exactly it should be the root of NARDOSTACHYS JATAMANSI of Hindustan.

Sanā—سنا—*sanā-ī-makaī*—سنامكي—*sanoī-makaī*—

Senna, the leaves of CASSIA OBOVATA (?) and other species employed in medicine; supposed to be brought from Mecca.

SANDSTONE—

The country in the vicinity of Salami produces some very fine high-coloured slabs of sandstone. These are placed at

the heads of graves uncut, and just as if lifted from the quarries. I measured one 13 feet long, 2 feet wide, and 2 feet thick.

Sanesh—

A needle, the technical term applied to needles fixed in a piece of wax employed to scratch the surface of the Opium Poppy head to allow of the exit of the milky juice.

Sang—سنگ—a stone, anything hard.
Sang-āhak—سنگ اهک—[limestone].
Sang-ātish—سنگ اتش—[fire-stone], flint.
Sang-chakhmākh—سنگ چخماخ—[flint-stone].
Sang-i-āsīa—سنگ اسیا—*sang-āsā*, [mill-stone].
Sang-i-marmar — سنگ مرمر — *sang-i-malmal*, [marble], alabaster, or chrysolite.
Sang-i-nivishta—سنگ نوشته—[inscribed stone].

A name applied to a large stone covered with inscriptions in the Nehal-shani pass.

Sang-pusht—سنگ پشت—[stony-back], the tortoise.
Sang-tōtī—[stone-covered], a tortoise.
Sang-tutia—سنگ توتیا—[the stone Tutty]. Here a common term for sulphate of copper. Tutty is a natural salt of zinc, found in Persia.
Sanī—سني—steel—*Sanesh*—a needle.
Sanjid — سنجد — *sanjit*, *sinjad*, *sinjit*, *sinjid*, ELÆAGNUS HORTENSIS, so called whether indigenous or cultivated.
Sankhīa—سنکهیا—the ordinary dirty grey ARSENIC of the bazaars.
Sāo-safed—[the white polisher], the herb GYPSOPHILA PANICULATA, the root-stocks of which are *bekh*, and employed as soap. *Sāvīdan*—ساویدن—to polish.
Sapad, *sabad*—a basket.
Sapistān—سپستان—Sebestens, the fruit of CORDIA MYXA.
Sar—سر—the head, the top.

Sar-i-khāna—سرخانه—[the top of the room].

The ring of wood or nave at the top of the roof of the *kabitka*, into which all the ends of the pieces of wood that form the roof are fixed, usually made of Mulberry wood.

Sar-pōsh—سرپوش—[head-cover], the lid, or wooden cover for a pot.

Sar-shīr, sir-shīr—سرشیر—[top of the milk], cream.

Sār —سار— placed after a noun means plenty, magnitude, as *sangsār*, stony ground; *nemak-sār*, salt fields.

SARCOCOLLA—[from the Greek, meaning flesh-glue] the manna-like substance, or drug yielded by ASTRAGALUS SARCOCOLLA.

Sarda—سرده—*sardā*, [cold].

A variety of the Melon, CUCUMIS MELO, collected late in the season, and largely exported from Afghanistan to India.

Sardī—سردي—cold, coldness.

Sares, sarīsh—سریش—*siresh, sirīsh*—

These terms are applied equally to the viscid glue-like gum obtained from the roots and leaves of EREMURUS AUCHERIANUS as well as to the glue made from animal refuse.

Sarīsh-i-kāhī — سریش کاهي — [vegetable-glue], made from the roots of EREMURUS AUCHERIANUS.

Sarīsh-i-narm—the flour made by grinding down the dried roots and leaves of EREMURUS AUCHERIANUS, preparatory to converting it into glue.

Sargīn—سرگین—*sarkīn*—dung, manure.

Sarnagūn — سرنگون — [topsyturvy], the head turned upside down, as in the flowers of a FRITILLARIA.

Saro—سرو—*saur, sawn, sarun*—سرون—the Cypress, CUPRESSUS SEMPERVIRENS.

Sarshaf—سرشف—Rape, BRASSICA CAMPESTRIS.

Sarson — سرسون — Hindustani for Rape, BRASSICA CAMPESTRIS.

Sātar—سعتر—a labiate, with a strong odour of Peppermint.

Saxaol — the Turkomani name for HALOXYLON AMMODENDRON, the White Tamarisk of Europeans.

SCENTS—

Rose-water, *gul-āb*, is prepared from the flowers of the Damask rose, ROSA DAMASCENA. A willow, SALIX species, is cultivated in Herat, for a scent that is obtained from its flowers by distillation. The shrub is called *majnu*, the shrub and scent *bed-mushk*; this may prove to be SALIX CAPREA, which is cultivated in the Punjab also for this purpose, but I have no other authority for considering it so. The rhizomes of an Iris, *ōrisā ōrisīā*, are imported from Western Persia for their scent, as well as to be employed in medicine. The Musk-pod, *mushk, tibit*, is imported from Tibet; from Central Asia the true *sambal*, FERULA SUMBUL, and as a substitute for the last, the root-stock of FERULA SUAVEOLENS. The root-stocks of VALERIANA WALLICHIANA, called in these parts *sambal-ultīb*, are imported from Afghanistan proper to Meshad.

The following gum-resins and herbs are strongly scented: —Galbanum, the gum-resin of FERULA GALBANIFLUA, especially when burnt; the grass ANDROPOGON LANIGER; the gum-resin of a species of BALSAMODENDRON; the fresh root-stock of FERULA SUAVEOLENS; ZIZIPHORA TENUIOR, the whole plant, is strongly pregnant with an odour of Peppermint; TEUCRIUM SERRATUM upon being crushed gave forth the odour of Asafœtida. The tubers on the roots of EREMOSTACHYS species, when crushed, yield an aroma usually associated with the CRUCIFERÆ.

Scorzonera mollis, *Bieb.* COMPOSITÆ, and

Scorzonera tuberosa, *Pall.* COMPOSITÆ.

The tuberous roots of these and other species are called *jhāg, kambul, mandalāk*; they are collected and eaten, either

raw or cooked; when cooked they make a rather nice vegetable, losing their extreme bitterness. The Scorzonera or Vipers-grass, cultivated as a vegetable in our gardens in England, is SCORZONERA HISPANICA.

SEALING-WAX—*lāk*—chiefly comes from Bokhara, a little from Persia; it is mostly used by the jewellers in their trade.

Seb—سيب—*sib*—the Apple, PYRUS MALUS.

Seb-i-zamīnī—[earth-apple], the Potato, SOLANUM TUBEROSUM.

Seb-i-zamīnī-angrez — [English-earth-apple]; the Jerusalem Artichoke, the tubers of HELIANTHUS TUBEROSUS.

SEBESTENS—the fruit of CORDIA MYXA.

Sebist, sepist, sipist — سپست — Lucerne, Medick, MEDICAGO SATIVA.

Secale cereale, *Linn.* GRAMINEÆ.

Rye, *gandam-dār, jao-tak-tak.* As a weed very largely affecting the wheat fields of the country; in some instances the fields appeared more rye than wheat, it is very rarely found to occur amongst barley, though I did find it in a field of barley at Bezd. The grain is not considered as injurious to those eating it when so largely mixing with wheat, but when diseased by the presence of Ergot, *sīa-khāk,* the grain is known to be injurious to the health. I am of the opinion that rye here, as in the Kuram Valley, is an indigenous weed of the wheat fields.

SEED—*dāna, dāne, cham, hab, pīla, tukhm;* a small seed, *dānak.*

SEEDLESS—*be-dāna, bī-dāna.*

SEED-VESSEL—capsule, *kawa.*

SENNA—the leaves of CASSIA OBOVATA, and other species employed in medicine.

Sepāru, supārī—سوپاري—the Areca nut, the nut of the AREA CATECHU Palm.

Sepia, *species.*

The Cuttle-fish; the internal calcareous skeleton, or cuttle-bone, is called *kaf-i-darīā*, or foam of the waters, and is usually brought to these regions by return pilgrims from Mecca, and hence is looked upon as a most important and valuable medicine.

Sepush—سپش—the seeds of a species of PLANTAGO employed in medicine; their resemblance to the bodies of lice has no doubt given rise to the name.

Sesamum indicum, *Linn.* PEDALINEÆ.

The Sesamum, *kanjīd, hanjīt, kunjid, kunjit;* Hindustani *til.* Cultivated for its seed for oil, *rōghan-i-kanjīd;* usually grown in fields associated with melons and tobacco, as it is a crop that requires free irrigation. The oil is employed both as a burning oil, and in dietary. The seeds, *tukm-i-kanjīd,* are much used in confectionery.

Setaria italica, *Beauv.* GRAMINEÆ.

Syn. PENNISETUM ITALICUM, *R. Br.*

„ PANICUM ITALICUM, *Linn.*

Italian Millet. The plant, *tōgī, tugī, thugī;* the seed, *gāoras; kangnī* of the Punjab. Is cultivated largely, and employed in the food of the people.

Sha—شه—or *Shā*—شاه—a king, a prince, great, excellent. A term of excellence as applied to the Spanish chestnut, CASTANEA VULGARIS, *shā-balut;* to the Mulberry, MORUS NIGRA, *shā-tut.*

Shab—شب—night, darkness.

Shab-pāra—شبپاره—[night-flyer], a bat; *shaprak* — شپرک — *shabparak, shauprak* [the little night-flyer]; a small bat, the silkworm moth, any moth, a butterfly.

Shafta—شفته—thin, delicate, beautiful.

Shaftarang—شفترنگ—[the beautiful coloured one]. A nectarine with a sweet kernel.

Shaft-ālu — شفتالو — [the beautiful plum]. The Peach, PRUNUS PERSICA.

Shaftal — شفتل — *shantal* — the Clover, TRIFOLIUM RESUPINATUM.

Shagh—شغ—a branch, a horn, an antler.

Shaghs, shaghz—the Maple, ACER species.

Shakar—شکر—sugar; also applied to manna.

Shāk—شاک—a shoot, a twig, a tendril, a root.

Shak-ākal—شقاقل—

Several plants go by this name. If it means [the root of wisdom], being a corruption for *shāk-akal*, then it would be the name for TRACHYDIUM LEHMANNI, eating the roots of which are supposed to increase the memory, and give knowledge; if the word means the [root yielding provisions], and is a corruption for *shāk-ākal*, it is applicable to the Carrot, DAUCUS CAROTA and to POLYGONATUM VERTICILLATUM; the rhizomes of the latter are considered a valuable food for the sickly.

Shakh—شخ—hard ground, the summit of a mountain, a branch.

Shākh—شاخ—*shagh*—شغ—a branch, a bough, a horn, a shoot, a peak. The Maple, ACER species.

Shākha-i-tāgh—

The dye-stuff obtained from the wood of HALOXYLON AMMODENDRON. The word is a technical one; it only means [the wood of the Haloxylon], and "dye" is left to be understood.

Shalgham—شلغم—the Turnip, BRASSICA CAMPESTRIS.

Shālī—شالي—the rice plant, ORYZA SATIVA.

Shām, shom—شام—black, a black spot, a mole.

Sham—سمع—a candle.

Shamal—شمل—the north; applied to a wind from the north that blows across the Hari-rud in autumn, bearing great quantities of sand along with it, very injurious to the crops.

Shambalīt, shanbalit — شنبلیت — the corms of MERENDERA PERSICA. The Hermodactyl of the ancients (?).

Shāmlī, shamlīd — شملید — *shamlīt* — شملیت — the Clover, Fœnu-greek, TRIGONELLA FŒNUM-GRÆCUM.

Shamshād — شمشاد — *shamshāt* — Boxwood, BUXUS SEMPERVIRENS.

Shamshātu — a tortoise.

Shāna — شانه — a comb.

Shangār — شنگار — MELILOTUS species; the fruit of *pīrwathī*, CYNANCHUM species.

Shaō-dāru, shava-dāru, shaōnīz — شونیز — the seeds of a species of NIGELLA.

Shaprak — شپرک — a small bat, a moth, the silk-worm moth, a butterfly.

Sharāb, shrāb — شراب — wine prepared from the juice of the grape.

Shāsh — the Elm, ULMUS species.

Shatīra — the Poppy, RŒMERIA HYBRIDA.

Shā-tut — شهتوت — the grafted Mulberry, MORUS NIGRA.

Shaufī —

A tribe of people who live near Teheran, who eat such animals as porcupines, hedgehogs, and lizards, which are usually looked upon as unclean.

Shaupara — شوپره — [a night flyer], a bat.

Shauparak, shauprak — a small bat, a moth, a butterfly.

Shautal, shaftal — the clover, TRIFOLIUM RESUPINATUM.

SHEEP — *mesh, gōspand, gōsfand*; Baluchi, *meth*.

The nomad tribes possess immense flocks of sheep and goats. With these they wander during summer over the great pasture-lands of the country; they collect the milk of the sheep and goats together, and from this mixed milk manu-

facture large quantities of butter and dried oxygal. The butter is at once clarified to permit of its keeping, and is put into prepared goat-skins for transport; it is usually thus conveyed to the nearest market-town, and there is repacked in huge jars for further transport. Upon the return of these nomads late in autumn there is a great trade done by them, as they pass through or in the vicinity of any large town, in sheep and goats; lamb, kid, and goat skins; clarified butter, and dried oxygal; in some manufactured woollen goods, as blanketing, carpets, felts, and clothing, the result of the industry of the women whilst in their summer encampments. The trade in sheep wool and the fine hair of the goat is mostly done during early summer with middlemen, who go to the great nomad encampments to collect the produce, a very different state of things to what it was in Ferrier's time, as the country is now overrun with middlemen purchasing up products, especially for the purchase of fine wools and manufactured goods, as carpets. The coarse goats' hair and coarser wools are wholly used up by the nomads themselves in their various necessities, as in clothing materials, blanketing for tents, felts, ropes, and such like.

Shersham, sharsham—Rape, BRASSICA CAMPESTRIS, var. NAPUS.

Shikam—شکم—the abdomen.

Shikam-pāra—[a portion (medicine) for the abdomen]; the seeds of PLANTAGO species, a well-known remedy in dysenteric affections.

Shikār—شکار—prey, game.

Shikārī—شکاری—a hunter.

Shilim—شلم—*shilm*—resin, gum-resin, gum, mastich.

Shilim-bārzat, and *shilim-i-bādra-kema*, the gum-resin of FERULA GALBANIFLUA.

Shilim-i-chirkha—the gum-resin of MICRORHYNCHUS SPINOSUS.

Shilim-i-pista—the resin, or mastich of PISTACIA species.

Shilim-i-zard-ālu—the gum of the Apricot, PRUNUS ARMENIACA.

Shīr—شیر—milk, the milky juice of a plant.

Shīr-ag—milk-herb.

Shīr-gīā — شیرگیاه — *shīr-gīā* — شیرگیا —any [milk-herb].

Shīr-go—a species of EUPHORBIA.

Shīr-khisht—شیرخشت—[hardened milk], the manna yielded by COTONEASTER NUMMULARIA.

Shīra—شیره—juice of fruit, syrup, treacle; the milky juice of the Poppy, PAPAVER SOMNIFERUM.

Shīra-ghī—syrup made from grape juice.

Shīra-tut—[Mulberry-syrup]; the infusion made from dried mulberries.

Shīrīn—شیرین—sweet, pleasant, gentle.

Shīsha—شیشه—glass.

Shōgle—Herati for a Porcupine, HYSTRIX species.

Shom, shām—شام—Arabic, black, a black spot.

Shōr—شور—saline, brackish; the name of a SALSOLA.

Shōra—شوره—salt-petre, a salt marsh, saline; the name applied to SUÆDA FRUTICOSA and SALSOLA FŒTIDA.

Shōra-gaz — شورهگز — or *gaz-shōra* — TAMARIX TETRAGYNA.

Shōra-kalmī — شورهقلمي — *shore-kalmī*, Crystalline Saltpetre.

Shōrag—SALSOLA FŒTIDA and SUÆDA FRUTICOSA.

Shōre—شوري—the plants HALOXYLON AMMODENDRON, and SALSOLA FŒTIDA.

SHOT—the nuts of PISTACIA TEREBINTHUS, var. MUTICA, are employed in lieu of small shot, by local sportsmen.

SHOVEL—a spade-like shovel, with an extremely long handle of willow wood, is called *bīl*. Any agricultural instrument, as an axe, a shovel, a spade, is *tabar*.

Shughāl—charcoal.

Shusha—شوشه—*shushad*—شوشد—chips, rubbish.

Shushag—pieces of broken pottery (Helmand).

Shutar—شتر—*shuthar*—a camel.

Shutar-khār —شترخار— [the camel-thorn], ALHAGI CAMELORUM.

Shutar-mār—[camel-snake], VIPERA OBTUSA, and the Cobra, NAIA OXIANA.

Sīa—سیه—*sīā*—سیاه—black.

Sīa-chōb — سیه‌چوب — [black-stick], the shrub COTONEASTER NUMMULARIA.

Sīa-kā—سیه‌کاه—[the herb (yielding) black]; the shrub MICRORHYNCHUS SPINOSUS.

Sīa-kand—سیه‌قند—[black-sugar], Molasses.

Sīa-khāk—سیه‌خاک—[black-earth]; the Ergot on Rye, SECALE CEREALE.

Sīa-khāna—سیه‌خانه—[black tents].

Sīa-kōh—سیه‌کوه—[black mountain].

Sīa-ling—سیه‌لنگ—[black limb]; the name for PRUNUS CALYCOSUS, owing to the extremely dark colouring the bark takes on when employed as a staff.

Sīa-pōsh—سیه‌پوش—[clad in black]; the name of a tribe.

Sīa-rōghan—manufactured tar, pitch.

Sīahk—the Marten, or Pole-cat.

Sīāl—سیال—a weed, grass.

Sīāl-i-we—the grass POA BULBOSA.

Sib, seb—سب—an apple, PYRUS MALUS.

Sīch—سیچ—trouble.

Sich, sīch—EREMURUS AURANTIACUS and EREMURUS OLGÆ.

Sīkh—سیخ—a wooden skewer, a spit.

Sīkhaōl—سیخول—[bearing skewers]; a Porcupine, HYSTRIX species.

SILK—*resham*; raw-silk, *resham-i-khāmak*—

Sericulture in this country has of late years become terribly depressed, owing to sickness and disease amongst

the worms, so much so that the natives have turned their attention to other products likely to prove remunerative, chiefly to the raising of opium.

SILK-WORM—the caterpillar of the silk-worm moth, *kirm-pela;* the eggs, *tukhm-i-pela;* the cocoon, *pela, pīla;* the moth, *shauprak.*

SILVER—*sīm, nokra.*

Sīm—سیم—silver.

Sīm-āb—سیم اب—[silver water], mercury.

Sīmang—ZYGOPHYLLUM FABAGO.

Sīm-kōh—[silver-hill]; these low hills to the extreme north-west of the Badghis still show traces of the old workings for silver and lead.

Sīndur—سیندور—*sundur*—red-lead.

Sinjad — سنجد — *sinjid, sinjit;* the Elæagnus, ELÆAGNUS HORTENSIS.

Sipist—سپست—*sebist*—Lucerne, MEDICAGO SATIVA.

Sipusha—سپشه—a nit, a louse.

Sīr—سیر—garlic, ALLIUM SATIVUM.

Sīr-pīāz-ak — [the little onion garlic], ALLIUM XIPHOPETALUM.

Sīr—corruption for *zīr*, meaning under, beneath.

Sīr-balak — [(the thorn) under the leaf]; the Barberry, BERBERIS VULGARIS.

Sires, siresh, siris, sirīsh—سریش—*sarīsh, saresh, sirish*—سرش—

These terms are applied equally to a vegetable glue-like gum, the product of EREMURUS species, or to the glue obtained from animal refuse.

Sīrinj—

"A gum-like substance" (*Trade Products of Leh*, p. 95). "The Turkomans obtain a very superior gum from the root of a plant that grows in Kokan, which they extract by boiling, and call *sīrinj*." This in all probability will prove to be the product obtained from an EREMURUS species.

Sirishk—سرشک—the Barberry, BERBERIS VULGARIS.
Sirka—سرکہ—*sirkā*—سرکا—vinegar.
Sir-shīr—*sarshīr*—[top of the milk], cream.

Sisymbrium Sophia, *Linn.* CRUCIFERÆ.

The seeds of this plant, *khāk-shī*, *khāk-shīr*, are employed in medicine.

SKIN—*pōst.*

Sheep-skins are prepared in very great numbers, tanned with the wool attached, to be made into robes called *pōstīn.* These are generally used throughout Afghanistan and Persia; during winter, they are largely exported to Central Asia, and to the north-western frontier of India, used by the natives, but the best trade is with the British frontier regiments. For winter use the men of these regiments are each supplied with one such coat, but specially made to suit their requirements by certain large firms in Cabul. There is a great trade in prepared kid and lamb skins. The finer quality of kid-skins are always called *Karakuli,* as if from that country, although prepared in Afghanistan or Persian territory. Goat-skins are tanned with the hair removed; the finest and most carefully prepared are those made to hold water in the Baluchistan desert country; they are, however, generally used to hold water, oil, clarified butter, also to contain the milk whilst being churned; but the chief use to which goat-skins are applied in these parts is for the manufacture of leather for shoes and saddlery, being dyed various colours to suit the wants of the people. Ox, horse, and donkey hides are proportionately little used, and are chiefly employed in the soling of shoes, and such like coarser uses.

SLATE—

Slate-formation was very common in the M^t Do-shakh ranges, amongst the limestone of those hills; and could be easily worked if required.

SMALL—*aj*, *chaka*—the syllables *ak*, and *cha*, added to a word, give the diminutive.

Smilax China, *Linn.* LILIACEÆ.

China-root, *chōb-chīnī.* What is supposed to be the root of this species is imported from China through Central Asia, and valued as a drug.

Smyrnium cordifolium, *Boiss.* UMBELLIFERÆ.

Kunhālk, eaten as a vegetable raw and cooked.

SNAKE—*mār*—

Snakes were very numerous throughout the country we traversed. In the dry desert country of Baluchistan, the Helmand, and similar parts of Persia, the small viper ECHIS ARENICOLA, was very common; in the sandstone country of the Badghis, VIPERA OBTUSA was specially characteristic, but it is not uncommon in the Hari-rud Valley, and I got a specimen of it in the Do-shakh range of hills, which is all limestone, so that it does not confine itself to sandstone, which I once thought it did. The Cobra, NAIA OXIANA, was met with occasionally, but owing to its great size and difficulty of preserving, only one adult specimen was kept; a good set of specimens of this species would be a valuable acquisition to any museum. Several species of ZAMENIS, with numerous specimens, were obtained; but bush-snakes, such as PSAMMOPHIS LEITHII, require to be carefully looked for with their curious habit of living among the upper branches of shrubs. The formation of the soil of the Badghis seems to be a paradise for snakes, and for numerous small rodents.

SNUFF — *naswār, nashwār* — to snuff — *nashuk-kardan.*

Is prepared from the leaves of NICOTIANA species, its errhine action is supposed to be increased by adding to it the powder of the stems, or the ashes of EPHEDRA PACHYCLADA. The natives, both men and old women, employ snuff to a great extent in these countries.

SOAP—*sābun*—

Is at all times an expensive article in these regions. It is made in villages when particularly required, but is usually imported from Turkistan and Maimana; the former produces

a very superior article to that locally manufactured, as at Herat, or Meshad. The finest is of course that imported from Europe, through Persia or *via* India. In lieu of soap the great root-stocks of an ACANTHOPHYLLUM, and of GYPSOPHILA are sold in the bazaars. Barilla and lime are also employed in the washing of wools and clothes.

SODA—an impure carbonate of soda and potash, is called *khār, ishkhār;* see Barilla.

Sōkhta—سوختہ—tinder.

Solanum Lycopersicum, *Linn.* SOLANACEÆ.

The Tomato, cultivated in gardens for its fruit, which is employed as a vegetable.

Solanum Melongena, *Linn.* SOLANACEÆ.

The Brinjal, Aubergine, Egg plant, *banjān, bādinjān;* Hindustani, *baingan.* Extensively cultivated in all gardens for its fruit, which is much relished by the people as a vegetable, and is, I think, with beet-root and carrots the most commonly used vegetable.

Solanum nigrum, *Linn.* SOLANACEÆ.

The Black Solanum, *tāj-i-rizī.* A common weed, the plant used as a vegetable, and the fruit, which is black, is dried to be used as a medicine. The same species, in the hills of India, has the fruit of a ripe apricot colour, and not black. It is curious to note that *tāj-i-rizī* may mean either a crown of grapes, which the fruit resembles, or a crown of poison, as the word *riz* has both meanings.

Solanum tuberosum, *Linn.* SOLANACEÆ.

The Potato, *seb-i-zamīnī;* Hindustani *ālu.* Cultivated for its tubers in Khorasan to a large extent, but not so much in Afghanistan.

Soma—

The ancient name for a plant, which by late authorities is considered as likely to have been an EPHEDRA, and is supposed to be another form of the words *hum, huma.*

Sombala—FERULA SUAVEOLENS.

Sophora pachycarpa, *C. A. Mey.* LEGUMINOSÆ.

Karuna, talkh. This is a very common roadside shrub, which no animals will graze upon owing to its extreme bitterness.

Sorghum vulgare, *Linn.* GRAMINEÆ.

The greater, or great Millet, *jaor, jaorī, jaoār, jaoārī, jāoras, jāwars, jāwaras, jaorī-turkomanī, kīos-agī;* the *jowār* of the Punjab.

This Millet is cultivated largely at Panjdeh, Bala-morghab, Maimana, on the Helmand, and in Baluchistan. In the district between Herat and Meshad it is only cultivated as single plants, here and there amongst crops, such as tobacco and melons which are freely irrigated. This Millet and ZEA-MAYS go by almost the same names, so that unless one inquires what the natives are speaking about it is impossible for us, and I believe even for themselves, to know which of these two they are alluding to, unless they use some distinctive term. The best name, and one which identifies the plant, but which is rarely used, is *kīos-a-gī,* meaning "the bent-grass," from the way the flower-heads are bent down. The stems here are not crushed but given entire to cattle.

SOUR, acid, harsh-tasted—*trush, tursh, turush, ishkīn.*

Spānāj—سپاناج—*spānākh*—سپاناخ—and *spināj*—the pot-herb Spinage.

SPINAGE—SPINACIA OLERACEA.

Spand — سپند — *spandān* — سپندان — *spanj* — the herb, PEGANUM HARMALA.

Spangaolī, spangulī, spingulī—the herb PEGANUM HARMALA; and the name of a locality where the herb was common.

Sparak — سپرک — *sparīg* — سپریگ—DELPHINIUM ZALIL, and its flowers.

SPECIES, kind, sort—*gun, guna.*

SPIKENARD—NARDOSTACHYS JATAMANSI.

Spinacia oleracea, *Linn.* CHENOPODIACEÆ.

Spinage, *spinach, spānāj, spānākh, spināj.* I feel quite sure that M. De Candolle is correct in assuming this to be

the cultivated form of SPINACIA TETRANDRA (*Stev.*). The indigenous plant has the same native names applied to it, and it is put to the same uses as a pot-herb. Spinage is cultivated commonly in all gardens, and where I collected SPINACIA TETRANDRA the natives pointed it out to me as *spināj*.

SPIRITS—*arak*—

A strong spirit, very like a bad brandy, is prepared from raisins, also from the fruit of the ELÆAGNUS. The preparation of spirits and wine is said to be carried on by Jews alone; once prepared the Afghans have no objection to make use of the liquor, but the manufacture is considered a heinous sin, and it is said that under this excuse alone are Jews permitted to remain in Cabul.

SPOON—*kāshuk*—the best are made from the wood of CELTIS, PISTACIA, and SALIX.

SPRING (of water)—*chashma, āb-khez, khez.*

SPUNK—*palīta, palīta-gōgird.*

Stachys trinervis, *Aitch. et Hemsley.* LABIATÆ.

Kalpura. A very characteristic shrub of the gravel plains of the Hari-rud. This is closely cropt by goats and sheep, and seems to make an excellent fodder.

STAFF—*chōb, chōb-i-dast.*

Stān—سټان—a place, a station.

STEEL—*folād, faulād, sanī.*

The steel employed in connection with flint to strike a light, *atish-bark;* Baluchi, *isthag.* It is remarkable how seldom flint and steel are now employed, even by the nomads, to strike a light; lucifer matches are always at hand.

Stellera Lessertii, *C. A. Mey.* THYMELÆACEÆ.

The myrtle-like bush of Baluchistan, *palīta, phalīta.* Very characteristic of the arid stony regions; it is not grazed on by camels, being injurious to them.

Stocksia brahuica, *Benth.* SAPINDACEÆ.

The hill-peach, *kōh-tōr*, [the beloved of the hills]. This is a large shrub, or small tree to 18 feet in height, character-

istic of the high desert flora of Baluchistan, extending north and west to the Harut Valley as far as Karez-dasht and Sang-bar. The inflated fruit hangs in clusters on this shrub well into winter, when it is quite devoid of leaves; the brilliant autumnal colouring of the fruit gives the shrubs a most gorgeous and attractive appearance,—to this is due its name.

STONE—*sang, takar, zuma, khal, lākh.*
Stourga—FERULA OVINA, the hill, or sheep Ferula.
STRAW—*ka, kā, ālaf;* Hindustani, *bhusā.*

The straws of barley and wheat are usually crushed, and in this condition are given as fodder to cattle, along with the straws of the various cultivated legumes. On the Helmand we found the straw of wheat left standing in the fields, the grain alone having been collected. The cattle were let loose and allowed to feed on the standing straw.

Strychnos Nux-vomica, *Linn.* LOGANIACEÆ.

The seed of the Nux-vomica, *kachola,* is imported freely into these parts as a valuable tonic, but it is chiefly employed by the nomad tribes for poisoning wolves and dogs, these animals frequently proving very destructive to their flocks.

Suæda fruticosa, *Forsk.* CHENOPODIACEÆ.

Shōrag. Employed in the manufacture of Barilla.

SUGAR—

Shakar, is any sugar, ordinarily brown soft sugar; *kand, kānd,* is loaf sugar; *kand-a-shīra-ghi,* is loaf sugar made from the syrup of grapes; *nabāt,* is sugar-candy; *sīa-kand* (Hindustani *gur*), is solid molasses; *shīra,* is treacle; *shīra-ghī,* is a treacle or syrup made from grape-juice; *misrī,* is Egyptian sugar-candy; and *chīnī,* a sugar-candy from Central Asia and China. In India *chīnī* is a crystalline sugar, but not sugar-candy.

With the exception of a treacle or syrup made from the juice of the grape, some say also from water-melons (Colonel Le Mesurier, in *From London to Bokhara,* p. 133, mentions that "in Merv there is a refinery to make sugar from melons"), all the sugar used in this country is imported from

Southern Persia, India, or Russia. It is imported not only for local consumption but for exportation to Turkistan. The most of the *gur* or solid molasses comes from India, a little from Southern Persia. Yezd sends a well-known loaf sugar, which is a through article, but is sold in the bazaars as *kand-i-yezdī*, as if manufactured there, which cannot be the case. A fine sugar-candy comes from Bandar-Abbas, well known as *nabāt-i-bandar-abbas*. Most of the loaf-sugar comes from India, some from Russia, called *kand-i-rusī*. A great deal of the coarse imported sugar is converted at Herat into a fine sugar-candy. I possessed specimens of sugar that were said to have been made at Herat from the juice of the grape; I regret these were lost, or rather stolen. They resembled small cakes of loaf sugar, but the crystalline structure was more like fine sand, and very gritty. The syrup or treacle made from grape-juice resembles our golden syrup treacle, and is consumed generally all over the country eaten with the diet. It is a capital addition to one's food, and not to be despised.

SULPHATE OF COPPER—*nīl-tutīā*.

SULPHUR—*gōgird*—is an importation from Persia and India.

SUMACH—RHUS CORIARIA.

Sumāgh, samagh—سماغ—*sumaghk*—the Sumach, RHUS CORIARIA.

Sumbal, sambal—سمبل—*sunbal, sanbal*—سنبل—the root of FERULA SUMBUL, or of FERULA SUAVEOLENS.

Sundur, sīndur—سيندور—red-lead.

Supārī—سوپاري—*sepāru*—the Areca nut; the nut of the ARECA CATECHU Palm.

SUPERSTITIOUS PREJUDICES—

The natives have certain superstitions relative to the following:—The Amaranth, AMARANTUS PANICULATUS, which is grown in ones and twos through the fields, to act as amulets, and thus protect the crops through which they grow. CELTIS CAUCASICA, PINUS HALEPENSIS, and PISTACIA VERA are usually found planted round their holy places or Ziarats,

with an occasional ROSA MOSCHATA climbing up one of these trees. The stems of TAMARIX, and the Almond, PRUNUS AMYGDALUS, are valued as hafts to whips, as a protection against snakes; a rod of the Almond carried in the hand indicates the priestly office. PEGANUM HARMALA and FERULA GALBANIFLUA are supposed to be preventatives of sickness; the former is collected and burnt in heaps to drive away sickness, or hung up in doorways; the latter is hung up in and around dwellings to drive off evil influences, especially during parturition. Amber, and the seeds of CÆSALPINIA BONDUCELLA, with pieces of the wood of CELTIS, are worn as amulets to keep off evil spirits. The cone of PINUS HALEPENSIS is kept by the ladies in their workbags in order to give luck. It is propitious to eat of the fruit of the Date-Palm at certain holy feasts. Afghans have a religious prejudice against mules and donkeys.

Surb—سرب—lead.

Surinjān—سورنجان—the corms of MERENDERA PERSICA.

Surkh—سرخ—*surkha*—سرخه—red.

Sus scrofa, *Linn.*

The wild boar, the pig, *khuk, khanzīr.*

Sus—سوس—in Arabic, a root; the Liquorice plant, GLYCYRRHIZA GLABRA.

Susan—سوسن—a Lily, an Iris.

Susanak—سوسنک—the herb ERODIUM CICUTARIUM.

SYRUP—*shīra, rob, rub.*

Tā, for *tar*—تر—*tār*—wet, moist, green.

Tā-gaz, for *tār-gaz*—[the green or sapid Tamarisk], HALOXYLON AMMODENDRON.

Tabak—طبق—a wooden platter or dish, usually made of willow, CELTIS, or walnut wood.

Tābāk—تاباک—the pith or heart of a tree.

Tabar—تبر—*tabār*—تبار—an axe, hatchet, shovel, spade; any agricultural tool, as a mallet for breaking clods.

Tabar-khun—تبرخون—[the blood (coloured) implement], the Jujube, ZIZYPHUS VULGARIS.

The young stems are valued as handles to implements, and when the wood is stripped of its bark it becomes blood-red, accounting for the name.

Tachina, *species.*

A small but very troublesome fly, *kajāk.*

Tāgh—تاغ—the White Tamarisk, HALOXYLON AMMODENDRON.

Tāghistān—تاغیستان—a place abounding in trees of HALOXYLON AMMODENDRON.

Tāghūn—the tree CELTIS CAUCASICA.

TAIL—*dum, dumb.*

Tāj—تاج—a crown, a crest, a wreath, a cock's comb.

Tāj-i-kharus—تاج خروس—[cock's comb]; the Amaranth, AMARANTUS PANICULATUS.

Tāj-i-rizī — [a crown of grapes, or a crown of poison.]

The herb and dried fruit of SOLANUM NIGRUM. The fruit of this is very like a bunch of grapes, and as the fruit is of the black variety it may be known to be sometimes poisonous. The apricot-coloured fruit, of the variety in India, is eaten by children in India, and is not poisonous.

Tak—تک—a grass that grows amongst wheat.

Tak-tak—the wild Oat, AVENA FATUA; *jao-tak-tak*, Rye, SECALE CEREALE.

Tāk—تاک—the plant of the Vine, VITIS VINIFERA.

Tāk — تاق — and *tākh* — تاخ — the White Tamarisk, HALOXYLON AMMODENDRON.

Taka—تکه—the male goat that leads the flock; applied to the male of the Ibex, and to the male of the Gazelle.

Takar—a stone.

Tākh — تاخ — the White Tamarisk, HALOXYLON AMMODENDRON.

TALK—طلک—Mica.

Talkh—تلخ—*talakh*—bitter; a name applied to SOPHORA PACHYCARPA.

Talkh-ak—تلخک—bitterish; the name applied to AMMOTHAMNUS LEHMANNI; and to the Colocynth, CITRULLUS COLOCYNTHIS.

Talkhā—تلخا—parched grain, pulverized, and mixed with water into a paste; a prepared food for travelling with.

Talkhan—the flour prepared from dried Mulberries.

Tamāku, tambāku, tanbāku — تنباکو — *tumāku*—tobacco, the plant and preparation of the leaves of NICOTIANA species.

TAMARISK, TAMARIX species.

The various species of TAMARIX are the commonest shrubs and low trees found to occur from Quetta to Balamorghab, and from Herat to Meshad, up to an altitude of 3000 feet. None of the wood, even though large enough, is considered as good for timber. It is used for fuel, and the smaller branches whilst still green are largely employed in basket-work, coarse or fine, as occasion may necessitate. These shrubs are all freely browsed upon by most animals, and form part of the daily food of camels, which, however, upon being restricted to a diet alone of Tamarisk, soon become ill. On the young shoots of these shrubs is deposited much saline matter, and in the south of Persia on the species TAMARIX GALLICA, VAR. MANIFERA, is deposited a manna called *gaz-i-shakar*. In Baluchistan and Afghanistan *gaz* is the usual term for any Tamarisk, on the Helmand *kirī*. The White Tamarisk of Europeans, the *tā-gaz*, more properly *tār-gaz* of Baluchistan, is not a Tamarisk at all, but is a Chenopodiaceous plant, HALOXYLON AMMODENDRON, which, owing to its habit of growth being like that of Tamarisks generally, is considered as such by the natives, and the Europeans have taken up their name.

Tamarix articulata, *Vahl.* TAMARISCINEÆ.

The mound Tamarisk, *khōra-gaz;* Baluchi, *kirī*. This forms an apparently indigenous forest on the Helmand river;

the trees average 6 to 9 feet in circumference (I measured one 15 feet), and about 40 feet in height.

Tamarix gallica, *Linn.* TAMARISCINEÆ.

The common Tamarisk, *gaz-māzu, gaz-kera, gaz-surkh.* Is a common shrub over the whole country, well known to yield a gall, but this is not collected in these parts; it is chiefly employed for fuel and in basket-work of all sorts, from the coarse material required to build houses, on the wattle and dab principle, or in the construction of dams across rivers, to the ordinary baskets required in household use. There is a superstitious regard for having the handles of whips made from this species, owing to the bright red colouring of the bark, which much resembles, but is higher in colour, than that of the Almond, PRUNUS AMYGDALUS.

Tamarix gallica, var. **Mannifera,** *Ehrenb.* TAMARISCINEÆ.

This plant yields a manna, and hence its name *gaz-shakar.* The manna it yields is called *shakar, gaz-angabīn, gaz-anjabīn.* I collected the specimens in the Badghis, from their having been pointed out to me by a native as the plant which yielded the manna. I myself could not distinguish between this variety and TAMARIX GALLICA, but the native certainly did, as the specimens subsequently proved to be the variety MANNIFERA at the Herbarium at Kew. The manna from this plant is said only to be collected in South-Eastern Persia, in the district of Kerman, where it is obtained in large quantities and exported in all directions.

Tamarix macrocarpa, *Bunge.* TAMARISCINEÆ.

The red Tamarisk, *gaz-surkh.* A common shrub, sometimes occurring as a good-sized tree, with the young bark very red.

Tamarix tetragyna, *Ehrenb.* TAMARISCINEÆ.

The saline Tamarisk, *shōra-gaz, gaz-shōra.* So named either for its having an unusually large amount of saline deposit on its leaves, or from being employed in the manufacture of Barilla.

Tambāku, tanbāku—تنباکو—Tobacco, the plant, and preparation from the leaves of NICOTIANA species.

Tanakār, tunakār, tinkār—تنکار—*tanakāl, tinkāl*—تنکال—Borax, Biborate of soda.

TANNING—

I. The indigenous plants and substances procurable in the country that are employed in the processes of tanning are :—

TAMARIX GALLICA, as shown by one of its names *gaz-māzu*, is known to yield a gall that is employed, but it is not made use of here.

ZIZYPHUS VULGARIS. The bark of the root of the indigenous shrub.

PISTACIA TEREBINTHUS, var. MUTICA. The leaves are turned to account.

PISTACIA VERA. The galls of the leaves are an important commercial product, both for dyeing and tanning, and are largely used here as well as exported, as is the external covering of the nut, and the unfertilized ovaries.

PUNICA GRANATUM. The fruit of the indigenous shrub, and the poor fruit of the cultivated one, yield their rind for colouring and tanning leather.

PROSOPIS STEPHANIANA. The galled pods of this plant are resorted to in tanning; these are exported for the same purpose.

APOCYNUM VENETUM. The bark of the creeping underground stem is considered a valuable substance for tanning skins to be employed as water bottles.

SALSOLA ARBUSCULA. The leaves and small branches are much used in preparing skins, in the desert country of Baluchistan, to be used as water holders.

LIME and BARILLA are both freely manufactured throughout the country. These are both employed in the process of tanning.

II. Cultivated to yield tanning material :—

RHUS CORIARIA is cultivated in orchards for its leaves, which are used both in dyeing and tanning.

III. Substances imported into the country to be employed in tanning :—

CATECHU. The extract of ACACIA CATECHU.

Oak-galls. The galls of Quercus species.

Areca Nuts. The seed of Areca Catechu.

Turmeric. The rhizomes of Curcuma longa; this is much used in finishing the sheep skins that are manufactured into *Pōstīns*.

The town of Turbat-i-Haidri, in Khorasan, produces an immense amount of leather, and here shoes of all sorts are manufactured very largely; these are traded with in every direction, and have a great reputation for quality.

Tar — Pitch — (manufactured), *kār*, *sīa-rōghan*; (natural), *mumīāī*, *mōmlāī*.

Tar—تر—*tār*, *tā*—wet, moist, green, juicy, luscious, fresh, young.

Tar-angabīn—ترانگبین—*tar-anjabīn*—ترانجبین—[green-honey]; in these parts the manna collected from the shrub Alhagi camelorum.

I at first thought that the reason why the name *tar-angabīn* was applied to this manna was that it was "the manna from the green bush, this name probably originating from the shrub remaining vividly green over the country long after all other plants have dried up and disappeared" (*Pharm. Jour.*, Dec. 11, 1886). Since then I have seen Layard's *Early Adventures in Persia*, vol. i. p. 349, where he says —"The mountainous country beyond Fellaut, in which we now entered, was thickly wooded with the '*beloot*' or oak. I observed several different species, one in particular bearing a very large and handsome acorn. But these trees are chiefly valuable for the white substance, called by the Bakhtyari '*gaz*' or '*gazu*,' a kind of manna. It is an article of export to all parts of Persia, and is everywhere sold in the bazaars, and employed in the manufacture of a sweetmeat called '*Gaz-enjubeen*,' which is much relished and considered very wholesome. When boiled with the leaves and allowed to harden it forms a kind of greenish cake not disagreeable to the taste; but prepared for the use of the ladies of the *enderun*, and to be offered to guests, it is carefully skimmed and separated from the leaves, when it becomes a sort of white paste of very delicate flavour." The name *tar-āngabin* would apply correctly to Layard's "greenish-cake," and this name has in all probability been merely

transferred to the produce of ALHAGI CAMELORUM in this district, without any reference to colour.

Tarīāk—تریاک—the drug Opium; the inspissated juice of PAPAVER SOMNIFERUM; medicinal treacle.

Tarkārī—ترکاري—vegetables, pot-herbs.

Tarnak, targanak—Turkomani for herbs, grass.

Tāterān, tātrān, tātrāng, tāturān, tetrān — the great roots, "Camel-turnips" yielded by CRAMBE CORDIFOLIA.

Tāwa—تاوه—a clay employed in the adulteration of the drug Asafœtida; red clay.

Tāza—تازه—new, fresh, green.

TEA—the prepared leaves of CAMELLIA THEIFERA.

Tebit, for *sebist*—Lucerne, Medick, MEDICAGO SATIVA.

TENT—*khāna*—black tents of the nomads, *sīa-khāna*; the felt tents of the Turkomans, *kabitkha*.

Terek-mastar, trakmastar — hill-carrots, ZOZIMIA ABSINTHIFOLIA.

Termes, *species.*

White ants, *khora, khōra, khura.* These pests are very common over the whole country, and are to be detected everywhere by their numerous clay mounds. These mounds are also called *khōra*, and apparently from them the same name has come to be applied to the domed coverings the natives build over the exposed end of the cut-over stem of the Asafœtida plant, FERULA FŒTIDA. The destruction that white ants cause to all timber, besides its scarcity, is one of the reasons why so few houses have roofs supported by beams in this country.

Terminalia belerica, *Roxb.* COMBRETACEÆ.

Yields the Beleric Myrobalans, the *balīla* or *balīle* of the Persians.

Terminalia Chebula, *Retz.* COMBRETACEÆ.

Yields the Chebulic Myrobalans, the *halīla* or *halīle* of the Persians.

These two kinds of Myrobalans are largely imported to be employed as a drug, and are exported in quantity to Turkistan; in the bazaars I usually met with both species mixed together.

Testudo horsfieldii, *Grey.*

The Tortoise, *kashaf, kashif, lāk-pusht, lāch-pusht, sang-pusht, sang-tōtī, shamshātu, tōsh-bake.* This species was very common from the Helmand to the Hari-rud, and in the country to the east of the Hari-rud; I do not think that I met with a single specimen, or even the remains of one, in Khorasan.

Tetrān—the Camel-turnip, CRAMBE CORDIFOLIA.

Teucrium serratum, *Benth.* LABIATÆ.

This herb was very strongly scented of Asafœtida.

Thambal—the Pumpkin, CUCURBITA PEPO (?).

THORN—*khār.*

THORN-BEARER—*khār-āor*—خاراور—changed to *khār-āol,* as in *khār-āol-khāna,* [the abode of the porcupine], the name of a locality; shortened to *āol,* the name for PRUNUS BRAHUICUS and PRUNUS EBURNEA, both of which are noted for their numerous spines. *Sīkh-aōl* for *sīkh-āol,* [the bearer of skewers], a porcupine.

THORN-APPLE—DATURA STRAMONIUM.

Thuz—the Turkoman term for salt; the name of a grass in Baluchistan.

Tibat—تبت—*tibit.*

The country Tibet; the fine soft hair, forming the under fleece of the goat, of which shawls are made, and which is called *pashmīna* in Kashmir; the Musk-pod of the Musk Deer MOSCHUS MOSCHIFERUS.

Tibatī—تبتي—*tibitī*—anything of, or belonging to, Tibet; the musk-pod; fine goats' hair.

Til—تل—Hindustani for SESAMUM INDICUM.

TIMBER—

In Baluchistan, over the district I traversed, there are no trees to yield timber; the largest that could be obtained would be from the few scattered specimens of PISTACIA TEREBINTHUS, var. MUTICA, or from a few cultivated trees of POPULUS EUPHRATICA, TAMARIX ARTICULATA, and TAMARIX MACROCARPA. The Helmand Valley is not quite so devoid of trees; a little timber is procurable from a natural forest of TAMARIX ARTICULATA and from the forests of POPULUS EUPHRATICA on the banks and islands of the river.

In the Badghis, Hari-rud Valley, and Khorasan, a very little good timber could be derived from a few cultivated trees of the Elm, ULMUS species; the Ash, FRAXINUS species; the Oriental plane, PLATANUS ORIENTALIS; the Walnut, JUGLANS REGIA; some Willows, SALIX species; and the Lombardy Poplar, POPULUS NIGRA. The indigenous trees which might be depended upon for a very limited supply would be the Juniper, JUNIPERUS EXCELSA; some Willows; POPULUS EUPHRATICA; and the Honeysuckle, LONICERA NUMMULARIFOLIA.

The Tir-band range was by the natives said to contain timber of sorts. To my regret I was not permitted to visit the locality, which could easily have been done, whilst the mission was encamped at Balamorghab. The moment I saw the superb lofty trees of PINUS HALEPENSIS, at Turbat-i-shaik-jami, at Rui-khauf, and Sangan, I grieved in my heart as in my mind's eye I saw them being ruthlessly hacked down for material for bridges and rafts for crossing the Hari-rud, for certainly that is their fate, if not now, in a very short time.

TIN—the metal, *kalaī*, imported by coppersmiths with which to tin pots and pans.

TINDER—*fandak, purze, sōkhta*—

Is prepared from cotton-wool; also from a RUMEX called *turush-ak*, in exactly the same way as is done in Ladak, by charring the stems and scraping off the browned surface, the scrapings forming the tinder; and from the leaves of a COUSINIA, to which a good deal of woolly tomentum is attached.

TINDER-BOX—*ātish-barg.*

Tingār —تنگار— *tinkār* —تنکار— *tinkāl*—تنکال—Borax, Biborate of soda.

Tīr—تیر—an arrow.

Tō, for *tōr*—تور—a sweetheart, beloved, cream, a peach.

TOBACCO—the prepared leaves of NICOTIANA TABACUM, and NICOTIANA RUSTICA.

Tōgī, thugī, tugī—Italian Millet, SETARIA ITALICA.

Tokhm, probably the same word as *tukhm*—تخم—a seed; the name for CELTIS CAUCASICA.

TOMATO—the fruit of SOLANUM LYCOPERSICUM.

Tōr—تور— *tō* — a sweetheart, beloved, cream, a peach.

TORTOISE—TESTUDO HORSFIELDII.

Tōsh—توش—power, strength.

Tōsh-bake—[the strong box], a Tortoise.

Tōtī—a covering.

Tōtō—توتو—covering each other as the layers of an onion.

Trachydium Lehmanni, *Benth. et Hooker.* UMBELLIFERÆ.

Skakākal. The roots of this plant are collected and exported as a medicine; they are the thickness of an ordinary pencil at the top of the root, and are about 4 inches in length, tapering very rapidly to a point. These are considered very valuable as a diet for improving the memory and increasing brain-power.

TRADE—

After consideration of the various products of the country, it is but natural to note what of this local produce does the country export, and lastly what products does it import for its own requirements.

Herat and Meshad are the two great centres of trade in this country—the one lying to the east, the other to the west, —through which all the trade of these parts passes both for exportation and importation. The chief exportation consists of sheep and goats; wools—sheep's wool, and fine camel and goats' hair; woollen goods, carpets, cloths, felts,

camlets; prepared skins, with the wool and hair attached, of sheep and kids; goats' skins, raw and tanned; clarified butter; dried oxygal (*karut*); wheat; fresh fruits—pomegranates, grapes, melons, apples, quinces, pears; dried fruits—apricots, prunes, raisins; nuts—pistacio nuts, almonds, walnuts; drugs—opium, asafœtida; dye-stuffs—madder, DELPHINIUM (*zalīl*), the rind of pomegranates, pistacio galls; gums of sorts; silken materials—the cocoons of the silkworm, raw and manufactured silk; a very few horses, some ponies and cattle.

The imports, applied to the uses of this country, are iron, and iron utensils of all sorts, both for agricultural and domestic use; copper-sheeting; tin; cotton and woollen goods, both of European manufacture and the local produce of the surrounding countries; rice; Indian corn; various sugars; molasses; salt; tea; condiments of sorts; drugs; dye-stuffs—indigo, aniline, cochineal, walnut bark, turmeric; tanning material—catechu, areca nuts, oak-galls, alum; sulphur; sal-ammoniac.

Raw cotton, tobacco, and barilla seem rather to act as local coinage; they are produced in the country, traded with by the people amongst themselves, and ordinarily do not go beyond the locality, these local products being consumed in the country itself.

TRAGACANTH—

The gum yielded by ASTRAGALUS HERATENSIS and other species is closely allied to the Tragacanth of European commerce, and is largely exported to Afghanistan, India, Persia, and Turkistan, under the name *katīra*.

Tragopogon coloratum, *C. A. Mey.* COMPOSITÆ.

A species of Salsafy, *gash-gōshī*, of which the natives eat the leaves and roots as a vegetable.

Trak-mastar, terek-mastar—Hill-carrots, ZOZIMIA ABSINTHIFOLIA.

TREACLE (liquid molasses)—*shīra*, a medicinal treacle—*tarīāk* (opium).

TREE—*dār, darakht, ban, bān, bana, wan, wana, gwan, gwana, kan, zan.*

Trek—ARTEMISIA CAMPESTRIS, and ARTEMISIA MARITIMA.

Trifolium resupinatum, *Linn.* LEGUMINOSÆ.

This clover, *shaftal, shautal,* is cultivated to some extent as fodder for cattle, but not to the amount, or nearly so commonly as MEDICAGO SATIVA.

Trigonella Fœnum-græcum, *Linn.* LEGUMINOSÆ.

This clover, Fœnu-greek, *shāmlī, shāmlīd, shāmlīt.* Is cultivated universally in gardens as a pot-herb, and occasionally, especially at Herat, for fodder for cattle. The leaves are commonly used for poultices.

Trīthk—an Anabasis, was so called on the Helmand.

Triticum vulgare, *Linn.* GRAMINEÆ.

Wheat, *gandam, ganam.* This is the chief cereal crop in these regions, and upon which the agriculturist largely depends for his exchange in trade; he scarcely consumes any of it himself, living almost entirely upon other grains, even if they have to be imported, as rice or maize. The greater amount of this produce is exported, much of it to Baluchistan, Cabul, and Turkistan.

Trush, tursh—ترش—sour, acid, tart, harsh-tasted.

TUBERS—*agar, agar-magar, gol, kachur, kors-i-gurba, sālab, yāgī-shāk.*

TUFACEOUS LIMESTONE—

Was very common at the base of Mount Do Shakh, and was employed to manufacture lime from in preference to the ordinary mountain limestone, owing to the former being much more easily turned into lime, and at less cost of fuel and time.

Tugh — توغ — the White Tamarisk of Europeans. HALOXYLON AMMODENDRON.

Tugī, tōgī, thugī—the plant SETARIA ITALICA.

Tukhm—تخم—*tokhm*—a seed.

Tukhm-i-banaush—the seed of FRAXINUS species.

Tukhm-i-bhāng—the seed of CANNABIS SATIVA.

Tukhm-i-gul—the seed of IPOMŒA species.

Tukhm-i-jinjak—the seed of PROSOPIS STEPHANIANA.

Tukhm-i-kanjīt—the seed of SESAMUM INDICUM.

Tukhm-i-khash-khāsh—the seed of PAPAVER SOMNIFERUM.

Tukhm-i-khair, *Tukhm-i-khaira*, *Tukhm-i-kheru*, } the seed of ALTHÆA LAVATERÆFLORA, and of other species.

Tukhm-i-khatmī—the seed of ALTHÆA HOHENACKERI.

Tukhm-i-nīla-far—the seed of IPOMŒA species.

Tukhm-i-rehan—the seed of OCYMUM PILOSUM.

Tukhm-i-turī—the seed of LUFFA, and CUCUMIS (?).

Tukhm-i-murgh—an egg, the egg of the domestic fowl.

Tukhm-i-pīla—silkworm eggs.

Tul—تول—gum, glue, cement.

Tulipa montana, *Lindl.* LILIACEÆ.

The Tulip, *lāle*, *lāla*. This is the more common tulip of these districts, which in spring characterises the stony arid plains by the brilliancy of its inflorescence, varying in colour from a deep red to pure yellow. The bulbs, *gōl-i-lāle*, are collected and eaten, and what I believe to be these bulbs, from a specimen lot at present in the Kew Museum, when deprived of their external coats, are passed off for, and sold under the name of, *sālap*, at Bombay. TULIPA HUMULIS, which is not uncommon, occurs in great beds, resembling in appearance our English wood Anemone, and was considered as such by several of those who accompanied the mission.

Tumāku, *tamāku*—the plant, and prepared leaves of tobacco, NICOTIANA species.

Turb—تربب—*thurb*—the radish, the plant and root of RAPHANUS SATIVUS.

Turī—توري—(Hindustani) LUFFA ACUTANGULA, and sometimes this name is applied by the Persians to CUCUMIS SATIVUS, but in the latter case it is probably a misnomer.

Turkamānī—تركماني—*turkimānī*, *turkomanī*—of or belonging to the Turkomans, the word is employed to identify certain products.

TURMERIC—the rhizomes of CURCUMA LONGA.

TURNIP—the plant, and root of BRASSICA CAMPESTRIS, var. RAPA.

TURNSOLE—CROZOPHORA TINCTORIA.

Tursh, turush, trush—ترش—sour, acid, tart, harsh-tasted; the grass of the Barley, HORDEUM VULGARE, or of any other cereal, given in a green state as fodder.

Turshak—ترشک—*turushak*—[sourish], a little acid; the name of a RUMEX, the stems of which are employed to make tinder.

Tut—توت—*tuth*—the Mulberry, MORUS ALBA; also a species of CAREX.

Tut-i-maghz—dried Mulberry fruit.

Tutia—توتیا—a grey Oxide of Zinc, Tutty, said to be found in a natural condition in Persia.

Typha angustata, *Borry et Chaub.* TYPHACEÆ.

The Bulrush, *lukh.* Employed in the roofing of huts, in the manufacture of matting, screens, and light basket-work.

TWISTED—*pech, ranj.*

Uch—the Baluchi for a camel.

Udish—ASTRAGALUS HYRCANUS.

Ul, al—ال—the Arabic form for our English word "the."

Ul-latīm—الطیم—[the scent]; musk, or any odour with which they perfume the temples.

Ultīb, altīb—الطیب—[this I believe to be a contraction, and corruption for الالطیب, then الطیم], scent, musk.

Ulmus campestris, *Linn.* URTICACEÆ, and
Ulmus montana, *Stokes.* URTICACEÆ.

These two species of Elm go under the same native names, *asal-pōshāk, asal-pishāk, grez, gurez, kanjak, pōsh-e-kām, pōsh-e-kār, shāsh.* These are cultivated trees at Maimana, Kalanao, Panjdeh, the Hari-rud Valley, and in Khorasan. Highly

valued for their timber, which is considered specially well adapted for making their rice-mills. The bark of the young shoots is employed in the raw state as twine or rope. The galls *kīsa, kīse, kesa,* are not employed.

Um—uma, hum, huma. The usual names for EPHEDRA PACHYCLADA.

In Baluchistan these are equally applied to PERIPLOCA APHYLLA. I never heard this name applied to a Tamarisk, though the Tamarisks when young are much more like the EPHEDRA than is the PERIPLOCA.

Umba—cotton pods, the fruiting pods of GOSSYPIUM HERBACEUM.

UNDER—*zīr*, frequently corrupted to *sīr*, or *zīl.*

Ungernia trisphæra, *Bunge.* AMARYLLIDEÆ.

The so-called black skinned or pig onion, *pīāz-khukī,* is a very characteristic bulbous plant, but not an onion at all. The large flask-shaped bulb consists of innumerable layers of thin, black, membranaceous coverings surrounding a very small growing axis. These bulbs are collected for feeding camels with. There are two species, this one with salmon-coloured flowers, the other with yellow flowers which I did not see.

UNRIPE FRUIT—*ākhkush, ākhkuk.*

Urd—اُرد—Hindustani for the Pulse, PHASEOLUS RADIATUS.

Ursus *species.*

The Bear. The natives said that between Bala-morghab and Maimana in the hills, both a red and black bear were known, but I could not get any skins, nor did I ever come across a skin in the Bazaars. The Persians on all occasions made much fun out of my enquiries relative to the *locale* of these animals; they always ended by saying, "do not be the least anxious, you will soon know as much about them as we do," alluding of course to the Russians. The black bear, *khul,* the red bear, *khirs, khirsa.*

Ushak—وشق—DOREMA AMMONIACUM.
Ustukhudus—اسطوخودوس—*ustakhadus.*

A labiate, employed in medicine, the name is supposed to be taken from the Greek.

Utranj—ترنج—an orange, CITRUS AURANTIUM.

Valeriana Wallichiana, *D'C.* VALERIANEÆ.

The root-stocks of this Valerian are called in Meshad *sanbal-ultīb, sambal-ultīb,* and are imported from Afghanistan. I collected this plant from the lofty rocks in the deep gorges of the Kuram Valley, Afghanistan, where the roots were collected and exported to Cabul under the names *māhk-ak, mushk-ak,* whence they were exported to India as *sambal-ultīb, indar-latīb, indar-ultīb, andar-ultīb, andar-latīb, gur-bālchōr-ak.* Employed as a scent and in medicine.

VEGETABLES—

Both the Persians and Afghans partake largely of vegetables cooked or in the raw state as part of their usual diet. Those cultivated in their gardens, and of which they usually make use, are beetroot, brinjals, carrots, radishes, turnips, cabbages, onions, cucumbers, gourds, pumpkins, endive, and lettuce, besides several pot-herbs; potatoes are in common use amongst the Persians, but these the Afghans do not seem to take to. In the better class gardens of the Persians, the artichoke, cardoons, and Jerusalem artichoke, with tomatoes and peas of a fair quality, are to be found.

The most remarkable of the indigenous plants which the people employ as a vegetable is the GUNDELIA TOURNEFORTII, the young leaves and shoots of which are used in the same way as we do the leaf-stems of the cardoon, and from the great resemblance it bears in general characters, as well as in uses, to the artichoke and cardoon, its name has apparently been adopted to name the two latter, viz., *kangar;* the shoots of the flowering-stems of the edible rhubarb are much eaten raw, as well as converted into a pot-herb; the leaves of EREMURUS AURANTIACUS and EREMURUS OLGÆ are used throughout the spring as the ordinary vegetable in the localities where they are common; the flowering-stem and

young leaves of the Asafœtida are used by the nomads who may be encamped in the vicinity of the great Asafœtida-producing plains.

The ordinary vegetables met with cultivated are:—

BRASSICA OLERACEA.
BRASSICA CAMPESTRIS, var. RAPA.
RAPHANUS SATIVUS.
TRIGONELLA FŒNUMGRÆCUM.
LAGENARIA VULGARIS.
LUFFA ACUTANGULA.
BENINCASIA CERIFERA.
CUCUMIS SATIVUS.
CUCURBITA PEPO.
DAUCUS CAROTA.
HELIANTHUS TUBEROSUS.
CYNARA SCOLYMUS.
CYNARA CARDUNCULUS.
CICHORIUM ENDIVIA.
LACTUCA SATIVA.
SOLANUM LYCOPERSICUM.
SOLANUM MELONGENA.
SOLANUM TUBEROSUM.
AMARANTUS PANICULATUS.
BETA VULGARIS.
SPINACIA OLERACEA.
ALLIUM CEPA.
ALLIUM SATIVUM.

Indigenous plants employed as vegetables:—

LEPIDIUM DRABA.
CUCUMIS TRIGONUS.
CARUM species.
SMYRNIUM CORDIFOLIUM.
FERULA FŒTIDA.
ZOZIMIA ABSINTHIFOLIA.
GUNDELIA TOURNEFORTII.
CENTAUREA MOSCHATA.
TRAGOPOGON COLORATUM.
SCORZONERA MOLLIS.
SCORZONERA TUBEROSA.
CACCINIA GLAUCA.
SOLANUM NIGRUM.
OROBANCHE species.
CHENOPODIUM BOTRYS.
SPINACEA OLERACEA.
ATRIPLEX MONETA.
ATRIPLEX FLABELLUM.
RHEUM RIBES.
EREMURUS AURANTIACUS
EREMURUS OLGÆ.
ALLIUM XIPHOPETALUM.
TULIPA MONTANA.
FUNGI species.

VESSELS—

For holding oil, clarified butter, &c., made from the prepared skins and intestines of animals, are called *daba-i-charm*; made of vegetable glue, the glue-like substance obtained from the roots of an EREMURUS are *daba-i-siresh*; a large iron pot or mortar is called *deg*.

Vicia Ervilia, *Willd.* LEGUMINOSÆ.

Mashing, mushing, māsh, ādas; māsh, however, is more properly a PISUM, and *ādas,* LENS ESCULENTA. Cultivated as a field crop above 3000 feet.

Vicia Faba, *Linn.* LEGUMINOSÆ.

The Field-bean, *bakhla, bakhlī, baglī, boglī.* Cultivated over the whole country as a field crop, usually as a margin to other crops, especially cotton. Beans are eaten cooked with meat; the flour is not used as bread. Animals are fed on the flour made from beans.

VINE—VITIS VINIFERA.

VINEGAR—*ishkī, sirka, sirkā.*

VIPER—

In the Hari-rud Valley and Badghis the huge VIPERA OBTUSA is very common, ECHIS ARENICOLA is more common in the dryer and hotter desert country; both are called *dusha.*

Vitis vinifera, *Linn.* AMPELIDEÆ.

The vine, *tāk;* the fruit grapes, *angur;* raisins, *kishmish;* currants or corinths, *zīrishk-shīrīn;* wine, *sharāb;* spirits made from raisins, *arak;* vinegar, *sirka;* syrup of grape-juice, *shīra;* sugar made from grape-juice, *kand-i-shīra-ghī.* The vine is cultivated wherever there is a garden. At Herat and Meshad large gardens contain ground laid out in vines alone; usually these are all trained as climbers, but at Bezd I saw some gardens in which were cultivated standard vines. The fruit is very variable in quality. The grapes of Herat are considered to be the finest. In Herat and its vicinity the largest amount of raisins are preserved, and much of both wine and spirits prepared. Throughout the country generally a syrup or very thin treacle is made from the juice of the grape; this is much eaten by the people along with their food, and is a great improvement when added to their usual coarse bread. Grapes and raisins, more particularly the latter, form a great export trade to India. The grapes collected when on the point of ripening are packed between layers of cotton-wool, in round flat boxes, much resembling the *drums* in which figs used to be imported into England some years ago; each box contains three layers of individual grapes closely packed together, each layer of grapes lying on a layer of cotton-wool, and thus they are exported to India, arriving there about Christmas time. These form a great addition to the table at that season, and are eagerly bought by both Europeans and natives. The grapes contained in these boxes

are usually a long green grape, but I have occasionally seen boxes containing red grapes. This part of the country does not produce corinths or currants, they are said to be imported into Cabul from Kafirstan, and then exported occasionally to India *via* Peshawur. An excellent vinegar is prepared from grape-juice in Herat; this is an article much exported.

Vulpes *species.*

A Fox, *rōba, rōbā, sālab, sālub.* Fox-skins, *pōst-i-rōba,* of which there is some trade in these parts.

Wach, waj—وج—the sweet-flag, ACORUS CALAMUS.

WALNUT—the tree and fruit of JUGLANS REGIA.

Wan—ون—*wana*—a tree; the PISTACIA VERA and PISTACIA TEREBINTHUS, var. MUTICA.

Wanīzad—ونیزد—*wanjad*—ونزد—[the tree-resin], the gum-resin or mastich of PISTACIA species.

Wāngar — the Kuram name for the indigenous PUNICA GRANATUM.

Wāra—وارہ—like, resembling.

Warag, warg, warak, wark—ورق—a leaf.

Wāsh—واش—fodder, herbage.

WASHING.

The roots of GYPSOPHILA PANICULATA and of ACANTHOPHYLLUM MACRODON, barilla, lime, and last of all soap, are employed in washing woollens, cottons, and clothes.

WATER—*āb, āo;* a well or shaft, *chā;* a reservoir, that is usually covered over, *hauz;* a spring, *chasma, āb-khez;* an underground conduit, *kharez, kārez;* a canal, *nahar;* a weir, embankment, or dam, *band;* a river, *rud, darīā;* a piece of water, the depth permitting of the growth of bushes, *hamun* (this originally means a level plain); the sea, or a river, *darīā.*

WATER-BOTTLE—*mashk.*

These are usually made of goat or kid skins. In Baluchistan, where every man carries one, some are beautifully prepared, the skin being very carefully tanned, and as soft as the leather of a glove.

WATER-MELON—the fruit of CITRULLUS VULGARIS.

WAX—*mum*—in this country there is little or none; it is imported into Herat from the great forest districts.

WELL—*chā*.

The wells in this country are mere shallow shafts, from 9 to 12 feet. I never came across a thoroughly constructed well in which the shaft was built of masonry as in India, nor did I meet with any well having an apparatus attached to it for drawing up or raising water.

Whāgar—the indigenous Walnut, JUGLANS REGIA, a Kuram Valley name.

WHEAT—TRITICUM VULGARE.

WHEATLING—ARENARIA HOLOSTEOIDES.

WHEEL—*charkh, charkha;* a spinning-wheel, *charkhī*.

WHEY—obtained during the manufacture of cheese, *āb-i-panīr;* during the manufacture of dried oxygal, *āo-karut*.

WHIP—*chabuk, kamchīn*—

The handles of these are usually made from the wands of TAMARIX GALLICA, or of the Almond, PRUNUS AMYGDALUS, owing to the superstitious belief that a snake will fly from these woods if the whip is thrown at them.

WHITE ANTS—TERMES species.

WHITE TAMARISK—the tree or shrub so called by Europeans is not a Tamarisk at all, but is of the natural order CHENOPODIACEÆ, HALOXYLON AMMODENDRON; it is the *tā*, or *tār-gaz*, the green or juicy Tamarisk, of the natives.

WILD—indigenous, *dashtī*.

WILLOW—SALIX species.

WIND—*bād*.

WIND-MILL, *asiā-bād*.

WINE—*sharāb, shrāb*—

The wine of the country is manufactured in the large towns. I have no information as to whether there is any

trade in it with the surrounding districts. Foreign wines and brandies are most certainly imported for the use of the wealthy.

WOOD—*chōb.*

WOOL—

Ordinary sheep's-wool, *pashm*, and a woollen material, *pashmīna*; in Kashmir, and India these terms are applied to the fine soft hair of the under fleece of the goat, which is here called *pat*, *tibat*, and the material made from it *patu* and *kurk*. There is an enormous exportation of wool in the raw state from this country through Persia to the Caspian, and also *via* Tabriz to the Black Sea, very little going towards Southern Persia, a good deal to India, besides manufactured woollen goods in the shape of carpets, and of late an immense trade has been struck up in carpets with Turkistan.

WORM—*kirm.*

Yābu—يابو—a long backed, short legged, sturdy horse, made as if it were for carrying loads, from Central Asia; a pony.

Yāghī—ياغي—the earth, the ground.

Yāghī-shāk — [earth-root], earth-nuts, tubers of CARUM species.

Yehma—EPHEDRA PACHYCLADA.

YELLOW—*zard.*

Zabān—زبان—the tongue.

Zafrān—زعفران—saffron, the stigmata of CROCUS SATIVUS.

Zaft, zift, zuft—زفت—pitch, tar, resin.

Zagāl—زگال—charcoal.

Zaghīr, zagher — زغير — the flax plant, LINUM USITATISSIMUM.

Zahr, zahar—زهر—Arabic, a flower, a yellow flower, a rose.

Zahr, zahar—زهر—*zahra*—زهره—poison, venom.

Zak—HALOXYLON AMMODENDRON.

Zalīl—the plant and dye-stuff DELPHINIUM ZALIL.

Zama—زمه—*zuma*, *zamch*—زمے—a white stone, alum.

Zambur, *zanbur*—زنبور—the honey-bee, a hornet, a wasp.

Zamīn—زمین—the earth, ground, land, soil.

Zan, for *wan*, a tree.

Zang—زنگ—the rays of the sun; rust.

Zan-ghōza—[nut (bearing) tree]; PINUS GERARDIANA; *zan-ghōz*, [tree-nuts], the seeds.

Zangāl, *zangār*—زنگار—sulphate of copper.

Zang-o-wach — the yellow dye of PROSOPIS STEPHANIANA.

Zanj—زنج—crying, weeping.

Zanjabīl — زنجبیل — *zanjafīl*—زنجفیل—*zangabīl* — ginger, the rhizomes of ZINGIBER OFFICINALIS.

Zar—زر—*zer*—Gold.

Zar-chōba—زرچوبه—turmeric, CURCUMA LONGA.

Zard—زرد—yellow.

Zardak — زردک — yellowish; the Carrot, DAUCUS CAROTA.

Zardak-kōhi—hill-carrots, ZOZIMIA ABSINTHIFOLIA.

Zard-ālu—زردالو—[yellow-plum], the Apricot, PRUNUS ARMENIACA.

Zard-ālu-pewandī—technically applied to the sweet-stoned Nectarine, var. of the Peach, PRUNUS PERSICA.

Zard-chōb—زردچوب—[yellow stick], the rhizomes of CURCUMA LONGA.

Zarda-chōb—زرده‌چوب—yellow wood; this may be the Turmeric, CURCUMA LONGA; the Barberry, BERBERIS VULGARIS; or DELPHINIUM ZALIL.

Zarishk — زرشک — *zīriskh*, *sīrishk*; the dried or preserved fruit of the Barberry, BERBERIS VULGARIS.

Zarna—زرنه—arsenic.

Zarnīkh—زرنیخ—yellow arsenic, orpiment.

Zea Mays, *Linn.* GRAMINEÆ.

Maize, *jaorī, jaoārī, jaorī-khurdanī.* I never could make out whether the natives were speaking of this plant or of SORGHUM VULGARE, as the ordinary terms *jaorī*, and *jaoārī*, are equally applicable to both. To those who may have the opportunity it would be as well to make a more careful examination into these names. In Baluchistan, and on the Helmand, maize is grown, but over the rest of the country I traversed it could not be considered a field crop, as if grown at all it was only grown as an occasional plant, at distances from each other, through fields of cotton, melons, and tobacco, in the same way as SORGHUM VULGARE, or PENNISETUM SPICATUM. Raised as a luxury only, for the cobs to be eaten roasted over the fire. The climate in these parts was not considered suitable for it without continuous irrigation, which could not be supplied. It is cultivated largely to the east of Herat, near Bala-morghab, Panjdeh, and in Turkistan, whence it is extensively imported into these districts; and its flour is in ordinary use here for bread.

Zebā, zība—زیبا—beautiful, elegant.
ZEDOARY—the rhizomes of CURCUMA ZEDOARIA.
Zer, zar—زر—the metal Gold.
Zer-bār, zīrbār—زیربار—impoverished; the Barberry, Berberis vulgaris.
Zer-khār, zīr-khār—[the thorn under (the leaf)], the Barberry, BERBERIS VULGARIS.
Zetun—زیتون—the Olive, OLEA EUROPEA.
Zīārat—زیارت—a shrine, a holy place.
Zift—زفت—*zuft*—pitch, resin.
Zīl, zīr—زیر—the fruit of LYCIUM BARBARUM.
Zīl-khār—the Bramble, RUBUS species.
ZINC—a natural oxide of zinc is said to be found in Persia, called Tutty; *sang-tutia.*

Zingiber officinale, *Roscoe.* SCITAMINEÆ.

Ginger, *zanjabīl, zanjafīl, zangafīl.* The dried rhizomes

are imported from India and Southern Persia, chiefly for exportation to Turkistan.

Zīr—زیر—*sīr, zīl.* Under, below, beneath.
Zīr-balak—[(the thorn) under the leaf]; the Barberry, BERBERIS VULGARIS.
Zīr-barg—[(the thorn) under the leaf]; the Barberry, BERBERIS VULGARIS.
Zīr-bār, zer-bār—زیربار—impoverished; the Barberry, BERBERIS VULGARIS.
Zīrishk, sīrishk, zarishk—زرشک—the preserved or dried fruit of BERBERIS VULGARIS.
Zīrishk-shīrīn—[sweet *zīrishk.*], corinths, or currants, the dried fruit of VITIS VINIFERA.
Zīrishk-tursh—[acid *zīrishk*]; the dried Barberry, BERBERIS VULGARIS.
Zīr-khār—[the thorn under (the leaf)]; the Barberry, BERBERIS VULGARIS.
Zīra—زیرہ—*jīra*—زیرہ—an umbelliferous fruit, sometimes that of CUMINUM CYMANUM.
Zīra-sīa—an umbelliferous fruit that is almost black.
Zīwān—زیوان—darnel, LOLIUM TEMULENTUM; a weed growing amongst wheat, the seed of which causes inebriety and madness.

Ziziphora tenuior, *Linn.* LABIATÆ.

Kākuti. Employed much in medicine, owing to its strong aroma of peppermint.

Zizyphus vulgaris, *Lam.* RHAMNACEÆ.

The Jujube, *ānāb, tabar-khun;* the fruit, *ānāb.* The indigenous form is a shrub, rarely a tree; it grows in the deeper valleys of the Badghis, forming a dense low scrub, almost inpenetrable owing to the huge thorns it bears. It occurs in the same form in Kashmir, on the slopes of the hills to the north-east of the lake, at from 5000 to 6000 feet altitude, characterising the landscape in autumn by the brilliant colouring of its leaves. On the banks of the Jhelum river,

entering into Kashmir, where I believe it also to be indigenous, it is more of a tree, and there forms a thicket that wild pigs cannot pass through. It is cultivated in all orchards (where its character is that of a good sized tree, but with few or no thorns) for its fruit, which is largely eaten by the natives, especially on journeys, in the same way as the fruit of the ELÆAGNUS, and this may account for the spread of the tree throughout the whole of Asia, wherever caravan journeys were made; but at the same time I am of the opinion that within the hills from the Badghis eastwards it is an indigenous shrub. I have seen it but very rarely cultivated in the Punjab plains, and in the Kuram Valley I found it being grown as a hedge, and cultivated at a shrine. Between Kuram and Thal it was certainly indigenous, but resembled ZIZYPHUS NUMMULARIA more in its method of growth.

The wood is valued as handles for farm implements. On the removal of the bark, the wood takes on a red colouring, hence its name *tabar-khun.* The branches of the cultivated tree are much cut off to be given as fodder to goats and sheep, and the bark of the branches of the cultivated tree, or of the roots of the indigenous shrub, is employed in the process of tanning.

Zoghāl, zughāl—زغال—*zagāl*—زگال—charcoal.

Zozimia absinthifolia, *Vent.* UMBELLIFERÆ.

Hill-carrots, *zardak-kōhī.* A common herb, much eaten as a vegetable.

Zufa—زوفا—HYSSOPUS (?) species.

Zuft, zaft, zift—زفت—pitch, resin, tar; the gum or resin of a cultivated tree, *pōsh-e-khām.*

Zuma, zama—زمه—a white stone, alum.

Zurat—the name on the Helmand for SORGHUM VULGARE.

Zygophyllum atriplicioides, *Fisch. et Mey.* ZYGOPHYLLEÆ.

Kech, kīch, kich. This is one of the commonest shrubs from Nushki to the Hari-rud, and is one of the few plants

animals will not eat; it is very characteristic in late autumn, when covered with its large, deeply winged, straw-coloured fruit.

Zygophyllum Fabago, *Linn.* ZYGOPHYLLEÆ.

Simang. A very common weed, especially in the debris of old buildings. The root, when beaten into a pulp, is applied as a poultice to clean foul sores and ulcers.

Since reading the above paper, and during its publication, the first parts of two valuable works bearing on many of the same subjects have been issued from the press, viz., *The Pharmacographia Indica*, by the authors, William Dymock, C. J. H. Warden, and David Hooper, published in London by Trübner & Co., and in Bombay by the Education Society's Press, Byculla; and *A Dictionary of the Economic Products of India*, by George Watt, C.I.E., M.D., Calcutta, 1889.

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The Source of Badsha, or Royal Salep. *Annals of Botany*, vol. iii., 1889, and *Transactions of the Botanical Society of Edinburgh*, vol. xvii., 1889.

ERRATA.

Page 2, line 36, for HASSAIN read HASSAN.

Page 7, under ALABASTER, CHRYSOLITE is mentioned. The specimens of this mineral have, however, been identified for me at the Museum of Science and Art, Edinburgh, and prove not to be CHRYSOLITE but ARAGONITE, a native carbonate of lime, in this instance (as it frequently does) containing traces of STRONTIA.

Page 8, line 23, for CEPA read CEPA.

Page 12, line 1, for ITALICA read ITALICA.

Page 12, line 6, for *Indarlutīb* read *indarlatīb*.

Page 14, line 29, for ARMENAIACA read ARMENIACA.

Page 25, line 2, for BEKH read *Bekh.*
Page 27, line 2 from foot, *for* medecine *read* medicine.
Page 38, line 5 from foot, for *Char-maghz* read *Chār-maghz.*
Page 40, line 13 from foot, for *Chob* read *Chōb.* The same in its compounds.
Page 45, line 3, for CARDAMOMUM read CARDAMOMUM.
Page 58, line 26, *for* roots-stocks *read* root-stocks.
Page 94, line 18, for DELPHINUM read DELPHINIUM.
Page 100, line 19, for LAVATERIÆFLORA read LAVATERÆFLORA.
Page 110, line 12, for NUMMULARIXFOLIA read NUMMULARIFOLIA.
Page 120, line 18, for REGALIANA read REGELIANA.
Page 122, line 9, for *Regal* read *Regel.*
Page 127, line 7 from foot, for DACTILIFERA read DACTYLIFERA.
Page 151, line 10, *for* wood *read* hood.
Page 161, line 17, for **Polypogan** read **Polypogon.**
Page 173, line 9, for JALIPA read JALAPA.
Page 179, line 10, for SATIVA read SATIVUS.
Page 186, last line, for AREA CATECHU read ARECA CATECHU.
Page 188, line 13, *for* which are *read* which is.
Page 197, line 14, for ZEA-MAYS read ZEA MAYS.

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