

but on being held some time in the mouth, it excites a very violent biting and burning; which lasts a long time, and cannot be abated by washing out the mouth.

FERRUM. *Lond. Dub. Ed.*

Iron.

THIS is the most common of all metals. It seems even to be a constituent of organic substances, and is the only metal which, when taken into the body, exerts no deleterious action upon it. The numerous ores of iron which are found in every part of the globe, may be reduced to the following genera.

1. Native iron. Immense isolated masses of this have been found in Siberia and in South America. Their origin is still perfectly problematical.

2. Carburetted iron. Plumbago.

3. Sulphuretted iron. Pyrites.

4. Oxidized iron.

a. Protoxide. Magnetic iron ore; colour black or grey.

b. Peroxide. Not magnetic; colour red or brown.

c. Carbonated.

d. Arseniated.

e. Tungstated.

The properties of iron, when obtained from any of these ores by the usual processes of fusion, &c. have been already described. As its mechanical division is extremely difficult, it is directed to be kept in the shops in the state of filings or wire, and the scales of black oxide, which are found around the smith's anvil. Soft malleable iron is the only kind fit for internal use, as steel and cast-iron always contain impurities, and often arsenic.

Iron is prescribed,

I. In its metallic state.

Ferri limatura. *Ed.*

_____ purificata. *Ed.*

Ferri ramenta et fila. *Lond.*

Ferri scobs. *Dub.*

II. Oxidized.

1. Protoxide,

Ferri squamæ. *Ed.*

Ferri oxydi squamæ. *Dub.*

Oxidum ferri nigrum purificatum. *Ed.*

Oxydum ferri nigrum. *Dub.*

2. Peroxide,

Oxidum ferri rubrum. *Ed. Dub.*

3. Supercarbonated; as in the chalybeate mineral waters.

4. Carbonated,
 - a. Carbonas ferri præparatus. *Ed.*
Ferri rubigo. *Dub.*
 - b. Carbonas ferri præcipitatus. *Ed.*
Carbonas ferri. *Lond. Dub.*
5. Sulphated,
Sulphas ferri. *Ed. Lond. Dub.*
6. Subsulphated,
Sulphas ferri exsiccatus. *Ed. Dub.*
7. Muriated,
 - a. Tinctura muriatis ferri. *Ed. Lond. Dub.*
 - b. Tinctura muriatis ferri cum oxydo rubro. *Dub.*
8. With muriate of ammonia,
Murias ammoniacæ et ferri. *Ed. Dub.*
Ferrum ammoniatum. *Lond.*
Tinctura ferri ammoniati. *Lond.*
9. With nitrate of potass,
Liquor ferri alkalini. *Lond.*
10. Acetated,
Acetas ferri. *Dub.*
Tinctura acetatis ferri. *Dub.*
Tinctura acetatis ferri cum alcohol. *Dub.*
11. With tartrate of potass,
Ferrum tartarizatum. *Lond.*
Tartarum ferri. *Dub.*
Vinum ferri. *Dub.*

FERRUM, s. s. Ferri ramenta et fila. *Lond.*

FERRI LIMATURA. *Ed.*

FERRI SCOBS. *Dub.*

Iron. Iron-filings. Iron-wire.

Medical use.—The general virtues of this metal, and the several preparations of it, are, to constrict the fibres, to quicken the circulation, to promote the different secretions in the remoter parts, and at the same time to repress inordinate discharges into the intestinal tube. By the use of chalybeates, the pulse is very sensibly raised; the colour of the face, though before pale, changes to a florid red; the alvine, urinary, and cuticular excretions, are increased. Fetid eructations, and black coloured feces, are marks of their taking due effect.

When given improperly, or to excess, iron produces head-ach and anxiety, heats the body, and often causes hæmorrhagies, or even vomiting, pains in the stomach, and spasms and pains of the bowels.

Iron is given in most cases of debility and relaxation.

1. In passive hæmorrhagies.
2. In dyspepsia, hysteria, and chlorosis.

3. In most of the cachexiæ, and it has been lately recommended as a specific in cancer.
4. In general debility produced by disease, or excessive hæmorrhage.

Where either a preternatural discharge, or suppression of natural secretions, proceeds from a langour and sluggishness of the fluids, and weakness of the solids, this metal by increasing the motion of the former, and the strength of the latter, will suppress the flux, or remove the suppression; but where the circulation is already too quick, the solids too tense and rigid, where there is any stricture or spasmodic contraction of the vessels, iron and all its preparations will aggravate both distempers.

Iron probably has no action on the body when taken into the stomach, unless it be oxidized. But during its oxidization, hydrogen gas is evolved; and, accordingly, we find that fetid eructations are considered as a proof of the medicine having taken effect. It can only be exhibited internally in the state of filings, which may be given in doses of from five to twenty grains, either in the form of powder, with some aromatic, or made into an electuary or bolus or pills with any bitter extract. Iron-wire is to be preferred for pharmaceutical preparations, both because it is the most convenient form, and because it is always made of the purest iron.

FERRI SQUAMÆ. *Ed.*

FERRI SQUAMÆ OXYDI. *Dub.*

The scales of iron. The scales of the oxide.

WHEN iron is heated to redness in the smith's forge, to render it more malleable, its surface becomes oxidized by the action of the atmospheric air; and as the oxide formed does not adhere to the iron, it is easily separated by percussion on the anvil, and flies off in the state of sparks, which, when cool, constitute the scales of iron. In these the iron is oxidized to that degree in which it is soluble in acids, without the production of hydrogen gas; therefore, when taken into the stomach, they do not produce the distension and flatulence occasioned by the use of the filings.

SULPHAS FERRI. *Dub. Ed. Lond.*

Sulphate of iron. Green vitriol. Copperas.

THE sulphate of iron of commerce is commonly obtained by the spontaneous oxidization of sulphuretted iron, and subsequent lixiviation and crystallization. It is never pure, and

often contains zinc or copper. The copper may be separated by adding some metallic iron to the solution; but we have no means of separating the zinc; therefore, in order to obtain it in a state of purity, we must prepare it by dissolving iron in diluted sulphuric acid. Its crystals are transparent rhomboidal prisms, of a fine green colour. They are soluble in two parts of cold, and in less than their own weight of boiling water. They are insoluble in alcohol.

They are composed of

| | | |
|-------------------------|---|-------------------------------|
| Black oxide of iron, 28 | } | 36 Green hydro-oxide of iron. |
| Water of composition, 8 | | 26 Sulphuric acid. |
| | | 38 Water of crystallization. |

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Green sulphate of iron is decomposed by all the earths and alkalies, and by those salts whose base forms an insoluble compound with sulphuric acid. It is also decomposed by exposure to the air, especially when in solution, and by all substances which part readily with their oxygen. The oxide of iron absorbs oxygen, and passes to the state of red oxyde, which forms a red sulphate, possessing properties very different from those of the green sulphate.

Taken internally, the green sulphate is apt to excite pain in the stomach, and spasms in the bowels; and in large doses it causes vomiting. In small doses, however, of from one to three grains, it is sometimes given as a tonic, astringent, or anthelmintic.

FERULA ASSA FÆTIDA. *Ed. Lond. Dub.*

Willd. g. 539, sp. 11.—Pentandria Digynia.—Nat. ord. Umbellatae.

Assa fœtida.

Officinal—The gum-resin.

FERULÆ ASSÆ FÆTIDÆ GUMMI RESINA. *Ed.*

ASSAFÆTIDÆ GUMMI RESINA. *Lond.*

ASSAFÆTIDA. *Dub.*

The plant which furnishes assa fœtida is perennial, and a native of the south of Persia. The gum-resin is procured from the roots of plants which are at least four years old.—When the leaves begin to decay, the stalk is twisted off, and the earth removed from about their large tapering roots.—The top of the root is some time afterwards cut off transverse-

ly; and in forty-eight hours, the juice which has exuded is scraped off, and a second transverse section is made. This operation is repeated until the root be entirely exhausted of juice. After being scraped off, the juice is exposed to the sun to harden.

It is brought to us in large irregular masses, composed of various little shining lumps or grains, which are partly of a whitish colour, partly reddish, and partly of a violet hue. Those masses are accounted the best which are clear, of a pale reddish colour, and variegated with a great number of elegant white tears.

This drug has a strong fetid smell, somewhat like that of garlic; and a bitter, acrid biting taste. It loses some of its smell and strength by keeping, a circumstance to be particularly regarded in its exhibition.

Neumann got from 1920 parts 1350 alcoholic extract and afterwards 190 watery; and inversely, 550 watery, and also 60 grains of volatile oil, in which the smell resides entirely. Tromsdorff got from four ounces 33 grains of volatile oil, lighter than water, 20 of heavy oil, 7 drachms 12 grains of bright brown resin, and 2 ounces 4 drachms of brown bitter extract of a nauseous and slightly alliaceous taste, which rises in distillation both with alcohol and water.

The seeds of a congenerous species growing in the north of Persia, the *Ferula Persica*, sent by Dr Guthrie of St Petersburg to Dr Hope, vegetated and even produced fertile seeds at Edinburgh.

Medical use.—It is the most powerful of all the fetid gums, and is a most valuable remedy. It acts as a stimulant, antispasmodic, expectorant, emmenagogue, and anthelmintic. Its action is quick and penetrating.

It is often serviceable,

1. In spasmodic croup.
2. In dyspepsia, amenorrhœa, and chlorosis.
3. In asthma, dyspnoea, and hysteria.
4. In tympanites and worms.

It is exhibited,

1. In substance, in the form of pills; in doses of from five to twenty grains, either alone, or combined with bitter extracts or purgatives.
2. Dissolved in some simple distilled water.
3. Dissolved in alcohol.
4. In the form of clyster, to the extent of about two drachms.

FICUS CARICA. *Ed. Lond. Dub.*

Willd. g. 1931, sp. 1. Polygamia Dioecia.—Nat. ord. *Scabridæ.*

The fig-tree.

Off.—The preserved fruit.

FICUS CARICÆ FRUCTUS. *Ed.*

CARICÆ FRUCTUS (CONDITUS). *Lond. Dub.*

THIS tree is probably a native of Asia, but grows plentifully in the south of Europe. The fresh fruit is very pulpy, but when dried is easily preserved. To this country figs are chiefly brought from the Levant. They consist almost entirely of sugar and mucilage, and are therefore demulcent. They also form a very convenient suppurating cataplasm, either roasted or boiled, and applied as hot as can be borne to parts where other cataplasms cannot easily be kept applied.

FRAXINUS ORNUS. *Ed. Lond. Dub.*

Willd. g. 1908, sp. 15. Polygamia Dioecia.—Nat. ord. *Ascyrbideæ.*

Manna ash.

Off.—The concrete juice. Manna.

FRAXINI ORNI SUCCUS CONCRETUS, Manna dictus. *Ed.*

MANNA. *Lond. Dub.*

MANNA is obtained from other species of *fraxinus* besides the *ornus*, and especially from the *rotundifolia*. It is principally collected in Calabria, Apulia, and Sicily. In the warmest season of the year, from the middle of June to the end of July, a clear juice exudes from the stem and branches of these trees, which, when naturally concreted on the plants, and scraped off, is called Manna in the tear; but if allowed to exude on straws, or chips of wood fastened to the tree, it is called canulated, or flaky manna. The common, or fat manna, is got by incisions made after the spontaneous exudation is over, and is in larger masses, and of a redder colour. The best Calabrian manna is in oblong, light, friable pieces or flakes, of a whitish or pale yellow colour, and somewhat transparent. The inferior kinds are moist, unctuous, and dark coloured.

Denon, in his travels in Sicily, has given an account of the manna produced there, which, though less known, is dearer than that of Calabria, and preferred to it. As soon as the trees are seven or eight years old, and about eight feet high, horizontal incisions are begun to be made in the bark one over the other, from the surface of the earth to the top of the tree. The operation is repeated every two days, from the 15th July,

until the rains or fogs of autumn suspend the circulation or deteriorate the quality of the saccharine juice which exudes. The liquor first appears like a white froth extremely light, pleasing to the palate, and of a very agreeable flavour. The heat of the sun coagulates this frothy juice, and gives it the form of stalactites. The glutinous and more highly coloured liquor that now distils from the wounds, is received on leaves of the Indian fig, placed for the purpose at the foot of the tree. This too becomes at length congealed by the sun, and being then taken up in lumps, forms what is called *Fat manna*, which is heavier, more purgative, and of much less value.

The wood of the manna ash is hard, heavy, and bitter, and the decoction of it is said to be aperient, and of great efficacy in the dropsy.

Olivier mentions different kinds of manna found in Persia, one called *Cherker*, more purgative than Calabrian manna, got from the north of Khorassan and Little Tartary; another very good to eat, which must be collected before sunrise, because it melts with the heat of the sun; and a third, called *Therenjabri*, the product of the *Hedysarum alagi*, in the warmest provinces of Persia and Arabia. It is gathered during a month at the end of summer. It is found in all parts of the plant, especially the young shoots, in little round grains, which have the taste and consistence of well-crystallized sugar, and like it crackle under the teeth. It is very common, and found in all the druggists' shops of Persia, but commonly mixed with leaves and other impurities. It is not more purgative than honey, but is much used as a pectoral.

Manna appears often to be formed and deposited by insects. Manna is said to be sometimes counterfeited by a composition of sugar and honey, mixed with a little scammony: there is also a factitious manna, which is white and dry, said to be composed of sugar, manna, and some purgative ingredient, boiled to a proper consistence. This may be distinguished by its weight, solidity, and transparent whiteness, and by its taste, which is different from that of manna.

According to Neumann, manna dissolves in alcohol. On setting the solution in a digesting heat, it gradually deposits 5-8ths of the manna, of a fine white colour, light, spongy, and in some degree crystalline, melting instantly upon the tongue, and impressing an agreeable sweet taste, without any of the nauseousness of the manna. By further evaporation 1-4th more is obtained, similar to manna; and on continuing the evaporation, a thick extract is formed, of the consistence of a balsam, which can scarcely be fully exsiccated, but continues moist, and resembles civet grown brown by age. This extract, which is about 1-8th, contains all the nauseous matter of the

manna. The experiments which I have made verify these observations. The quantity of matter which a hot alcoholic solution of manna deposits on cooling is various: a saturated solution concretes into a perfectly dry, white, spongy, crystallized mass. When much less concentrated, it deposits a congeries of most beautiful snow white acicular crystals. A saturated solution in boiling water also forms a solid crystallized mass on cooling. Fourcroy says, that when a solution of manna is clarified with whites of eggs, and sufficiently concentrated, crystals of sugar may be obtained from it. But with Dr Thomson the experiment did not succeed: its crystals were always acicular, and more difficultly formed.

Medical use.—Manna is a mild agreeable laxative, and may be given with safety to children and pregnant women: nevertheless, in some particular constitutions, it acts very unpleasantly, producing flatulency, and distension of the viscera: these inconveniences may be prevented by the addition of any grateful warm aromatic. Manna operates so weakly as not to produce the full effect of a cathartic, unless taken in large doses; and hence it is rarely given by itself with this intention. It may be commodiously dissolved in the purging mineral waters, or joined with the cathartic salts, senna, rhubarb, or the like.

FUCUS VESICULOSUS. *Lond. Dub.*

Murray, g. 1205, sp. 8.—Nat. ord. Alga.

Off.—Yellow bladder wrack.

FUCUS. *Lond.*

QUERCUS MARINA, fructibus præsentibus. *Dub.*

THIS is one of the most common sea-weeds found on our shores. Its value in the manufacture of kelp is well known. In medicine it is little used; though Dr Russel recommended the mucus of the vesicles as a resolvent, when applied externally to scrofulous swellings. The charcoal obtained by burning it in close vessels has in some places got the name of *Æthiops vegetabilis*. It is to be considered as a compound of charcoal and carbonate of soda.

GENTIANA LUTEA. *Ed. Lond. Dub.*

Willd. g. 512, sp. 1. Pentandria Digynia.—Nat. ord. Rotaceæ.

Gentian.

Off.—The root.

RADIX GENTIANÆ LUTEÆ. *Ed.*

RADIX GENTIANÆ. *Lond. Dub.*