CHAP. XV.

RUBEFACIENTS AND EPISPASTICS.

RUBEFACIENTS and Epispastics operate nearly on the same principle, and produce similar effects, differing only in degree. They may therefore be considered as subdivisions of one class.

The term Epispastic has been applied to whatever application has the power of producing a serous or puriform discharge, by exciting a previous state of inflammation or suppuration. The term includes blisters, issues, and setons; but it is more commonly restricted to the first of these, and it is this which chiefly falls under the department of Materia Medica.

Blisters are those external applications which by their acrimony excite inflammation on the skin, and which, occasioning a thin serous fluid to be poured from the exhalents, separate the cuticle from the true skin, and form the appearance of a vesicle or blister.

The mode in which they produce this effect is sufficiently evident; it is to be referred to the stimulating power of the substances applied, which exciting increased action in the extreme blood-vessels, induces inflammation, and causes the pouring out of the serous fluid with which the vesicle is filled. Hence may be deduced the primary effects of these applications on the general system. By the increased ac-

tion they excite, and the pain they occasion, they act as stimulants, and they may also act, it has been supposed, as evacuants, by the quantity of fluid which they cause to be poured out.

There can be little dispute by which of these modes of operation blisters are used with advantage in the treatment of diseases. The quantity of fluid discharged is so inconsiderable, while the relief obtained is often so sudden and complete, that it would be assigning a very inadequate cause for their effects, if we should ascribe these to any evacuating power.

Some have imagined that the substance of cantharides, which forms the basis of the common blistering applications, is absorbed in part by the inflamed surface, and that it is to the peculiar action of this acrid matter stimulating the system, that many of the effects of blisters are owing. But there is no proof, nor indeed any reason to believe, that this absorption is uniform or frequent; the same effects are obtained from blistering applications into the composition of which cantharides do not enter, while they are not obtained from the internal administration of cantharides. The effects of blisters are therefore to be ascribed to the pain and inflammation they excite in the part to which they are applied, and the stimulus which is thence propagated to the general system.

It is a principle with regard to the living body, demonstrated by many facts, that where a morbid action exists, it may be often removed by inducing a different action, even of a morbid kind, in the same part, or in parts as contiguous to it as possible; and where the morbid action extends to the whole system, it may be removed by one of a different kind being excited either generally, or in any particular part of the body.

From this principle is explained the efficacy of blisters in all cases of inflammation and of spasmodic constriction; a new inflammation being excited by the blister which occasions derivation of action. Hence, too, the advantage obtained is greater when the blister is applied as near as possible to the part affected. This principle regulates the application of blisters in pneumonia, hepatitis, phrenitis, angina, ophthalmia, rheumatism, and every other case of active inflammation. In these affections, blisters are used with very evident advantage; the local inflammation which is excited more than counterbalancing, by this operation, the stimulant effects at the same time produced.

A similar principle exists with respect to the pain excited by blisters, which may be applied to the explanation of the advantages derived from them in other diseases. It has long been remarked, that exciting one pain often relieves another, and hence blisters afford relief in toothach, and other painful affections. Epilepsy and hysteria arising from irritation have been removed by blisters; apparently from their exciting pain, engaging the attention, and diminishing the sensibility to the morbid irritation.

Lastly, blisters exert a stimulant operation on the general system, and raise the vigour of the circulation. Hence their utility in fevers of the typhoid kind, where extreme debility prevails. From their peculiar operation too, they are the only remedy that can be used to obviate the local inflammation of the brain, or other parts, that sometimes exists in fevers of this kind, as they contribute to resolve it without reducing the strength of the system.

It is also from their stimulating power, and perhaps from exciting pain, that blisters are of advantage in apoplexy and paralysis.

Rubefacients operate precisely in the same manner as blisters; they excite pain and inflammation, but only in an inferior degree; the skin merely is inflamed, and no vesicle raised so that any fluid shall be discharged. By these effects they more peculiarly obviate local inflammation. They are used, therefore, for the same purposes.

EPISPASTICS AND RUBEFACIENTS.

Meloe vesicatorius.
Sinapis alba.
Allium sativum.
Euphorbium.
Pix burgundica.
Elemi.
Ammonia.

Cantharides. Meloe Vesicatorius. Lytta Vesicatoria.

The natural history of this substance has been given under the class of Diuretics, to which it belongs. It is, however, a more important article of the Materia Medica as an epispastic, and is the substance, indeed, which is now almost exclusively employed to raise a blister, as it acts with certainty, and is not liable to induce that deep-seated ul-

ceration which sometimes follows the application of other acrid substances that have been used for the same purpose. The cantharides in powder is mixed with lard and wax, so as to form a plaster of a proper consistence, which is applied to the part, generally for 10 or 12 hours: at the end of that time, the cuticle is raised, forming a vesicle; this is then cut, to allow the serous fluid to be discharged, and the inflamed part is dressed with any mild ointment. The principal circumstance which requires caution in the application of the cantharides plaster, is that determination of action to the neck of the bladder which gives rise to strangury. This is more peculiarly liable to occur where the system is uncommonly irritable, where the blister is large, or where it is applied to a newly abraded surface, as to the head recently shaved; and as it is a very painful affection, not easily removed, care ought to be taken to guard against it. Camphor has been sometimes added to the blistering plaster, with the view of obviating this. But it is doubtful if it has any such effect: the plentiful use of diluents, while the blister is applied, prevents it much more certainly; and it is always proper when a blister is applied, especially if large, or in inflammatory diseases, to order the patient to drink freely of any mild diluent liquor. Where the strangury does occur from the application of a blister, it is best relieved by an enema of tepid water, with a little expressed oil, and 30 or 40 drops of tincture of opium, and by the use of the warm bath, or warm fomentations.

In some diseases, as in apoplexy, it is of importance to be certain of the operation of an epispastic, and to have its effect produced in a short time. To attain these, a compound plaster is ordered by the Edinburgh College, Emplast. Meloes Vesicat. Comp. in which the stimulating power of the cantharides is increased by the addition of other acrid sub-

stances, burgundy pitch, turpentine, verdigrease, mustard, and pepper. In the application of this still more caution is necessary to guard against the occurrence of strangury.

After a blister has been raised, it is often of advantage to convert the serous discharge into one of a purulent nature, by exciting suppuration, or to form what is termed an Issue: this can easily be effected by the application of any acrid stimulating ointment; one composed of wax and oil, with a small proportion of cantharides, is commonly used for this purpose, as by the irritation it excites, it keeps up the inflammation, and at length produces suppuration. Any foreign body retained on the inflamed part answers the same purpose. What are named Orange Peas, the small unripe fruit of the orange, polished, are usually employed, as by their odour they cover the fœtor of the discharge. One of these is retained on the blistered part by a slip of adhesive plaster, and by the irritation it occasions, keeps up a constant discharge. A seton, or cord introduced by a needle, answers the same purpose. When a puriform discharge is thus established in a part, considerable effects arise from the morbid action which it continues, and the evacuation it occasions. It is a practice often employed with advantage in asthma, paralysis, and a number of chronic affections.

Sinapis. Mustard. (See page 323.)—The flour of mustard-seed, mixed with an equal part of wheat-flour or crumbs of bread, and made into a paste with vinegar, forms what is named a Sinapism, an application which acts as a powerful rubefacient. It is applied to the soles of the feet in typhoid fevers, where there is extreme debility, or determination to the head. It is used in the same manner in comatose affections; the application of it in either case being continued

for an hour or two. It soon excites a sense of pain, and if applied long produces inflammation.

Offic. Prep.—Catap. Sinapeos. *Lond. Dub.*

Allium. Garlic. (See p. 414.)—The bruised root of this plant, applied to the soles of the feet, produces effects similar to those of the sinapism, and is used for the same purpose. It is less powerful, and its odour is ungrateful.

Euphorbium. Euphorbia Officinalis. (Page 431.)

This resinous substance, already considered as an errhine, is a powerful vesicatory. It enters into the epispastic compositions of the farrier, and might be employed, mixed with other epispastics, when it is of importance to obtain the effects of a blister in their full extent, speedily and with certainty. As a rubefacient, it has the advantage over cantharides, that from its fusibility, it can be diffused uniformly through the resinous matter which forms the composition of plasters, while cantharides can only be mixed in powder. The action of a rubefacient plaster prepared with it is therefore more equal. Twelve parts of burgundy pitch or of litharge plaster with resin, with one of euphorbium, forms an excellent rubefacient of this kind.

Pix Burgundica. Burgundy Pitch. Resina Pini Abietis. Pinus Abies. *Monœcia Monadelph. Coniferæ.*

This substance is obtained by exudation from incisions made in the trunk of the tree. It is boiled with water; is strained; and when cold forms a concrete resinous matter, retaining a little essential oil. As a rubefacient, it is spread upon leather, and applied to the skin: it excites a slight degree of inflammation, and an exudation of serous fluid, with-

out separating the cuticle, so as to produce a blister. Hence it is less painful in its operation, and the application of it can be continued for a considerable time. It is used with advantage in catarrh, pertussis and dyspnœa.

Offic. Prep.—Emp. Pic. Burg. *Dub.*

ELEMI. Amyris Elemifera. *Octand. Monogyn.*

THIS resinous substance is obtained by exudation from incisions which are made in the bark of the tree. It is in large masses of a greenish colour, has an odour slightly fragrant, and a warm bitterish taste. It consists of resin with essential oil. It is used to promote the purulent discharge from an issue, and as a stimulating application to foul ulcers, under the form of an ointment which is officinal in the London and Dublin Pharmacopœias.

Offic. Prep.—Ungent. Elemi. Comnos. *Lond. Dub.*

AMMONIA. Ammonia. (Page 319.)

THE solution of ammonia in water of the usual strength, (Aq. Ammoniæ), applied to the skin, acts as a rubefacient. The common form under which it has been employed, is mixed with two or three parts of expressed oil, with which it forms a thick saponaceous compound, (Oleum Ammoniatum), formerly known by the name of Volatile Liniment. A piece of flannel moistened with this, and applied to the skin, soon excites superficial inflammation. It is often employed instead of a blister to the throat, in angina tonsillaris, being less painful, yet frequently effectual. It is also sometimes applied by friction to relieve the pain of rheumatism.

Offic. Prep.—Ol. Ammon. *Ed. Dub.*

THIRD DIVISION.—OF CHEMICAL REMEDIES.

Under this division are comprised those few classes of medicines, the operation of which either depends on the chemical changes they produce, or is materially modified by these changes. I have placed under it the classes of Refrigerants, Antacids, Lithontriptics, and Escharotics.

CHAP. XVI.

OF REFRIGERANTS.

The substances arranged by authors on the Materia Medica under the appellation of Refrigerants, have been defined, Such medicines as directly diminish the force of the circulation, and reduce the heat of the body, without occasioning any diminution of sensibility or nervous energy. The theory delivered of their operation is unsatisfactory and obscure; nor are even the facts adduced to establish the existence of such a class of remedies altogether precise. It is acknowledged by Cullen, that "in many trials made on purpose, it did not appear that the supposed refrigerants diminished that