PHARMACEUTICAL JOURNAL

AND

TRANSACTIONS.

VOLUME V.

1845-6.

EDITED BY

JACOB BELL.

LONDON:
JOHN CHURCHILL,
PRINCES STREET, SOHO;
MACLACHLAN & STEWART, EDINBURGH; & FANNIN & Co, DUBLIN.

1846.

[On the 23d of January Mr. Brayley delivered his Second Lecture on Porcelain and Earthenware, and their application to Chemistry and Pharmacy, the abstract of which is deferred until a future number.]

PHARMACEUTICAL MEETING,

FEBRUARY 11, 1846,

MR. SQUIRE IN THE CHAIR.

A paper was read on

THE CULTIVATION OF RHUBARB FOR MEDICINAL USE IN THE NEIGHBOURHOOD OF BANBURY.

BY MR. WM. BIGG.

This paper contained much interesting information, which has been furnished in reply to a list of queries prepared by the Scientific Committee. A long discussion ensued on reading the paper; but as some further details are required to render the account complete, the publication of the paper is deferred until this additional information has been obtained.

ORIGINAL AND EXTRACTED ARTICLES.

ON THE PROPERTIES OF THE

HIPPOMANE MANCINELLA, OR MANCHINEEL TREE.

BY W. HAMILTON, M.B.

The manchineel is a large handsome spreading tree, with a trunk of from seven to twelve feet or more in height, attaining, with its spreading branches, a total elevation of about thirty feet. It is found, I believe invariably, on the sea-shore, forming a beautiful and verdant border to the sandy beach in most of the West India islands. Its dark green foliage is shining as though covered with a coating of varnish, like those of the Camellia or Thea, and loaded with its sweet-smelling fruit, resembling a small apple in appearance, it presents altogether a most lovely and tempting object to the stranger, who disembarks for the first time upon the shores of an intratropical region.

The fruit, when ripe, drops from the tree and strews all the ground beneath, tempting the unwary stranger by its fair but treacherous exterior; but left to dry up by the action of the solar heat, untouched by any animal, save the inexperienced visitor. An opinion prevails that the crabs occasionally feed on them, and acquire from thence poisonous qualities: but this opinion appears to have originated merely in the circumstance of their frequenting the spots in which these trees abound; and although they are reputed to be poisonous, when taken from such

localities, and are in consequence cooped and fed upon other food for a considerable time before using in most of the islands, this caution seems to be of somewhat questionable necessity; since Jacquin informs us (p. 327) that "in Grenadensi insulâ similibus desumpta locis, sine metu ullo atque impunè comeduntur; nunquid igitur alii est causæ adscribenda Martinicensium noxa?" Like every other part of the tree, the manchineel apple abounds in a caustic milky juice, which blisters whatever part of the naked body it falls upon; and it requires some stretch of faith, to the standard at least of that of the Jew Apella, to believe that so caustic a food could be taken into the stomach of the crab, and communicate poisonous properties to its flesh, without destroying the life, or impairing the health of the eater. The occasionally poisonous properties of the crab must be sought for in some other cause; but this is foreign from our present inquiry.

The timber of the manchineel is of a close and handsome grain, susceptible of a high polish, well adapted for articles of furniture, and of great durability, but injurious to those who cut it down or work it, unless they protect their hands, face, eyes, mouth, nose, and other parts of their body, from the sap and finer particles which fly from it: previously to cutting it down, a fire is usually kindled round the trunk for the purpose of driving off a portion of the caustic milk. The same end might probably be better attained, by cutting off a ring of bark of sufficient extent, just before the commencement of the periodical ascent of the sap.

Every part of the tree, with its leaves, flowers, and fruit, abounds in the caustic milk of which I have spoken: and it is said, that the very drops of rain which fall from its leaves blister whatever part of the naked skin they chance to alight upon. Of this I cannot speak from personal experience, although I have not scrupled to take refuge beneath its friendly shade, from the fury of many a tropical storm.

Hughes, the historian of Barbadoes, acquaints us that the leaves may be used for fish-poisoning, a statement apparently at variance with the imputed impunity with which crabs are said to feed upon the fruit, which abounds in the same sap as that which destroys the fish. Long, nevertheless, repeats the same tale, informing us that "the white land crabs are fond both of the leaves and fruit;" adding, "but I have known persons taken extremely sick at their stomachs after eating these crabs, and who were not relieved until they were disgorged by drinking plentifully of warm water and oil. I remember," he continues, "a negro, who continued ill for three days, from a meal he had made on these crabs, but, without having recourse to medicine,

was relieved by natural evacuations downwards, and was perfectly well after them."

We have it also upon the same authority, that "it is well known that goats, and even sheep (Tertre adds macaws) feed very greedily upon the fallen fruit, when it is in a state of perfect maturity, and doubtless resolve it into wholesome nourishment. "Instinct," he observes, "which determines the choice of these animals, points out this as an aliment not baneful (at least to them) for they suffer no injury from it." Jacquin, on the contrary, distinctly says "Nulli unquam animali tactos inveni, etsi vulgo ferantur amati cancris, qui eadem loca, sed ob aliam longè opinor rationem, multitudine vix credibili incolere consueverunt." Jacquin also contradicts the popular opinion respecting the danger arising from the drops of rain which fall from the leaves upon the naked body, and from the imprudence of sleeping beneath its shade; his words are:

"Fertur etiam arboris umbra noxam inferre subtus recubanti, sed pertrihorium ipsi mihi cum sociis periculum facienti, *nihil mali* evenit. Tum etiam pluviam trans hanc arborem, corporeque nudo exceptam, *innocuam* sum expertus: noxia fortasse fuit, ubi rupti ventis vel imbribus rami foliave hac simul destillaverint pluviæ immistum."

I have already stated my own experience, which, as far as it goes, coincides with that of Jacquin; and I think it extremely probable, as he conjectures, that the rain falling from the leaves and branches, is only injurious when, from some accidental abrasion a portion of the caustic sap becomes intermingled with the drops.

With respect to the fruit, I once made a trial of its effects by eating a very small fragment immediately before breakfast, trusting to the effect of the food I was about to take, in diluting its acrimony, and thus rendering it innocuous. I experienced no inconvenience from swallowing it, in either the fauces or œsophagus, but its reception in the stomach was attended by a burning sensation, which, had it not been for the counteracting influence of my breakfast, might possibly have terminated in active inflammation. I did not, however, venture to repeat the experiment. Lunan says, that a gentleman of his acquaintance, "who was fond of making experiments, to satisfy himself upon doubtful points, cut the green fruit, and a small quantity of glutinous juice issued out at the wound. He tasted this, and likewise the bark and leaf of the tree; but could perceive only a slight astringency on his tongue. He then cut deeper into the bark of the trunk, and tasted some of the milky juice that oozed out. He observed that it tingled his tongue gently, and rendered his saliva thin and fluid. He afterwards tasted the fruit, nearly ripe, and chewing the *ripe* part, found it perfectly insipid."

Browne speaks of cases in which the fruit was eaten through ignorance, in which vomiting took place, and probably expelled much of the noxious matter; but a burning sensation continued to affect the fauces, œsophagus, and stomach for some hours after. He says, however, that he *never* knew a case prove fatal, though he has seen persons who had eaten nine or ten of the apples at once; where they disagreed, relief was speedily obtained from oily emulsions and mixtures. In a case mentioned by Dr. Barham, of a negro, who had eat several for the purpose of suicide, the effects were much more severe, and the termination was fatal. The symptoms were a burning sensation in the stomach, without vomiting; the tongue was swollen, the eyes red and staring, and the thirst intense, till death closed his sufferings.

These discrepancies may perhaps admit of being reconciled by the not improbable supposition that the causticity of the sap varies with the seasons of the year, and even, as happens with other intratropical productions, with the phases of the moon; and that it is much more active in the unripe than in the mature fruit. Of this last, we have abundant examples in the various fruits of Europe, which, in their immature state, are harsh and sour, but on ripening have their unwholesome acid converted into sweet and nutritious sugar.

Sir Hans Sloane notices the case of a patient of his own, a turner, who suffered from some of this sap which got into his eye, as he was incautiously felling a tree. The inflammation it excited ran, as might have been expected, very high, but was easily subdued by a strict antiphlogistic plan, accompanied by bleeding, purging, and the application of cold lotions to the part; under which treatment he recovered perfectly in three days. He also speaks of a man who eat four of the apples with nearly perfect impunity.

As is not uncommonly the case, the gum, or rather gum resin, which exudes from the ruptured bark, and is obtainable in greatest abundance in February, is perfectly free from the acrimonious properties of the sap. This gum resin is of a light reddish or yellowish colour, is soluble in rectified spirit, and possesses many properties in common with the resin of the guaiacum officinale; from which it may be distinguished by the colour of the transmitted light, which, in the true guaiacum, is usually of a deep green. The tincture of the manchineel resin has been employed by Dr. Barham as a diuretic in anasarca and other dropsical affections, its exhibition being combined with decoction of contrayerva and iron. The medical properties of this gum resin call for much more minute and careful investigation.

What is the caustic principle contained in the sap—and is it not capable of application to some useful purpose, either in Medicine or the Arts? Does it retain its acrid property when inspissated either by solar or culinary heat? and might it not in that state be applied to some useful purpose, and what?

The acrimony of this sap is said to be corrected by bathing the parts which have been blistered by it with lime-juice, or sea-water, in the immediate vicinity of which it grows: and also by friction of the parts affected, with the buds and young leaves of the white cedar (Bignonia leucoxylon, and B. pentaphylla) which usually grow in society with it.

The apples of the manchineel put into a press or drawers with clothes, are said to banish cockroaches from them.

From the utility of lime-juice in counteracting the irritating effects of the milky sap of the manchineel, it would almost appear as if its acrid qualities arose in a great degree from the presence of an alkali, combined with some other substance which modified, without destroying its causticity. The action differs undoubtedly from that of the dumb cane (Caladium seguinum) but it may not the less proceed from a similar cause—at all events, the investigation is one calculated to awaken the curiosity of the inquisitive, and its results may be the addition of another of our colonial productions to the catalogue of imports.

14, *Octagon, Plymouth.*

HISTORICAL NOTICE OF THE CHLORIDE OF FORMYLE,

COMMONLY CALLED CHLORIC ETHER, OR TERCHLORIDE OF CARBON.

BY DR. PEREIRA, F. R. S.

The term *chloric ether* was applied by Dr. T. Thomson (*System of Chemistry*, 6th edit., 1820) to the liquid formed by the union of equal volumes of chlorine and olefiant gas, and which is described in different chemical works under the name of *chloride of olefiant gas*, or the *Dutch liquid*. The formula of this liquid is $C_4 H_4 Cl_2$.

In 1831, Mr. Guthrie, an American Chemist, was led to attempt a cheap and easy process for preparing it, by a statement in Silliman's *Elements of Chemistry*, that the alcoholic solution of chloric ether was a grateful and diffusible stimulant. His process, which was published in Silliman's *American Journal of Science and Art*, vol. xxi., p. 64, January, 1832), was as follows:—

"Into a clean copper still, put three pounds of chloride of lime and two gallons of well-flavoured alcohol, of sp. gr. 0.844, and distil. Watch the pro-