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HISTORIAE NATURALIS ET MEDICAE INDIAE
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LIBRI QUINQUE.

AMSTELODAMI, APUD LUDOVICUM ET DANIELEM ELZEVIRIOS.
Ao. CIOICLVIII.

WILLEM PISO

PHYSICIAN IN AMSTERDAM.

FIVE BOOKS ON

THE NATURAL HISTORY AND MEDICINE OF
THE WEST INDIES

AMSTERDAM, LODEWIJK AND DANIEL ELZEVIER
1658 A. D.

LIBER SECUNDUS

DE NATURA ET CURA MORBORUM IN INDIA
OCCIDENTALI, IMPRIMIS VERO IN
BRASILIA FAMILIARIUM.

INTRODUCTIO.

.....

Sed caeteris facile palmam praeripiunt celebres illae radices *Ipecacuanhae*, in tractatu simplicium delineatae.

Ad has primum refugium capiunt omnes pariter Incolae, utpote tutissimas ad exturbandum sive assumptum venenum, sive cacochemicam saburram circa praecordia haerentem.

Prae caeteris autem revulsionis gratia exhibentur contra fluxus ventris, nimium in Indiis familiares.

Pluribus encomiis hanc eximiam Panaceam extollerem; sed vereor ne Satyricus quispiam id de mea *Ipecacuanha*, quod tempore CATONIS de *Brassica* nimium laudata dixit: *Brassica Dia* CATONIS.

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SECOND BOOK.

ON THE NATURE AND TREATMENT OF THE DISEASES
WHICH OCCUR MOST FREQUENTLY IN THE
WEST INDIES, AND ESPECIALLY
IN BRAZIL.

INTRODUCTION.

.....

But all other remedies are surpassed by the renowned roots of the *Ipecacuanha*, described in my treatise on officinal herbs.

The natives resort first of all to these roots as to the most reliable remedy, not only suitable to expel swallowed poisons, but also tainted matter that has accumulated in the gastric region.

Principally they use these roots as a derivative remedy against diarrhoea, which is only too frequent in the Indies.

I might go on commending this excellent panacea, but I fear that a satirist would be tempted to make a similar remark about my *Ipecacuanha* as in the days of CATO was directed at the cabbage, too much praised by him: *Cabbage is CATO's goddess*.

.....

CAPUT IX.

DE VENTRIS FLUXIBUS.

Viscera naturalia oppilata, ac toties ab humoribus qualitate et quantitate peccantibus lacescita, tandem exonerationem moliantur. Et tunc quidem fluxus varii, pro diversitate partis affectae et naturae humoris vel bene vel male morati, sequuntur. Unde vel critici, vel symptomatici judicantur. Sicut enim ex cruditate ventriculi, et chylicationis frustratione, symptoma Lienteriae se prodit, et fluxum hepaticum laesa hepatis substantia et venarum mesaraicarum regurgitatio profert.

Praeterea sicut intestinorum eorumque venarum erosio, ulcus dysentericum, ita ani exesio inflammationem et putredinem causatur, quae *Bicho* Lusitanis dicitur.

Adhaec orgasmus acerrimi humoris ex aëre et fructibus calidis et humidis prognatus, choleram, multasque colicas passiones producit.

Horum omnium proximae et immediatae causae impeditae transpirationes vel obstructions non sunt; sed illorum potissimum qui diarrhoeae et fluxus alvi vocantur. Sin vero ab aliqua acrimonia et malignitate materiae morbificae, vel atonia partium, incidunt tales, qui Dysenteriae, Fluxus hepatici vel Cholerae appellantur, symptomatici et saepe lethales habentur.

Diarrhoea simplex, vel ex arte, vel per se facile et cito curationem recipit; sin minus, in peiores fluxus degenerat, qui vel ex calida aut frigida materia oriuntur.

Qui ex frigida, album alvi profluvium sine febre vocatur, (excipitur autem ille quem GALENUS ab adipe, a calore igneo liquefacto, proficisci testatur) quando nimirum crudus ac pituitosus humor

CHAPTER IX.

ON DIARRHOEA.

When the intestines are constipated and have been irritated many times by fluids, which are abnormal both as to quantity and composition, this finally leads to a bowel movement. Various kinds of diarrhoea may follow, either benignant or malignant, depending on the part of the intestine affected and the composition of the morbidic humour. Hence it is, that the diarrhoea is considered critical or symptomatical. So, for instance, an overloaded stomach or the insufficient production of chyle, may cause lientery, whereas an impaired function of the liver and stasis in the mesenterical veins is followed by a liver flux.

Moreover, as the erosion of the intestine and its veins causes a dysenteric ulcer, so the destruction of the anus results in inflammation and putrefaction, which is called *Bicho* by the Portuguese.

Besides, if the intestines are filled with that very acrid fluid, that proceeds from the air and from juicy fruits, this may result in the vomiting of bile and colic.

The immediate cause of all this, is not insufficient perspiration or obstructions but chiefly diarrhoea. But if through the acidity and the malignancy of the pathogenic material or through relaxation of the affected parts such illnesses occur, which are called dysentery, liver flux or cholera, they are considered to be symptomatical and often lethal.

Simple diarrhoea is cured easily and quickly, either spontaneously or by means of a remedy: if on the other hand it fails to respond to treatment, it changes into a more malignant diarrhoea, arising 'rom warm or cold obstructing matter:

Diarrhoea resulting from the cold, is called white diarrhoea, without fever (except the one, which GALENUS ascribes to a melting of the fat through feverheat); indeed, in this case, the raw and mucous

perpetuo delabitur, aegrumque magno dolore paulatim languescere facit.

Atque hic quidem fluxus omnem promiscue aetatem, hyberno potius quam aestivo tempore infestans, ad multos saepe menses, nonnunquam ad annos durat. Tametsi sine febre minusque lethalis sit quam caeteri, non inter eos censeri debet tamen, quem HIPPOCRATES in *Praedict.* 1. 2. f. 2. mitem et parum durabilem esse tradit;

quod hic diuturnus et difficilis admodum deprehendatur; cum huius mali causa sit cruditas pituitosa redundans ex frigore, quae transpirationem et circulationem impediat, collecta, et a praecipuis corporis partibus ad intestina abeat.

Curatio primo a clysteribus abstergentibus qui mel silvestre imprimis recipiant, incipit. Interim corpus syrupis aliquandiu similibus praeparatur. Dehinc ad radicem *Ipecacuanha*, tanquam ad sacram anchoram, confugiendum, qua nullum praestantius aut tutius, cum in hoc, tum in plerisque aliis, cum, vel sine sanguine, fluxibus compescendis, natura excogitavit remedium. Quippe praeterquam quod tuto et efficaciter tenacissimos quosque humores per ipsam alvum, saepissime autem per vomitum ejiciat, et a parte affecta derivet, vim quoque astrictivam post se relinquit.

Non enim vomitus solum sponte superveniens, ut ait HIPPOCRATES Aph. 15. 1. 6. sed et arte concitatus, sub eodem Aphorismo comprehendendi potest.

Illud vero modo perficitur.

Drachmae duae radices *Ipecacuanha* in 3 iiij liquoris appropriati coctae, vel per noctem maceratae, cujus infusum cum vel sine oxymelis 3 j exhibetur.

Postridie semel atque iterum pro re nata, secunda imo tertia ejus decoctio repetenda; tam quod aegri debiliores eam facilius ferant; quam quod astrictoria ejus vis tunc magis efficax appareat.

Caeterum nuces *Munday-guaçu* sive vomicae (quibus vulgus imperitum non tam utitur quam abutitur, cum vehementer per vomitum et secessum exturbent) si ex praescripto exhibeantur, haud exiguum commodum praestant.

fluids (humours) are voided continuously and the patients waste away gradually, suffering great pain.

This diarrhoea indiscriminately affecting persons of every age, preferably during winter, often persists for many months, even years sometimes. Although not accompanied by fever and less perilous than the other forms, still one is not allowed, it seems to me, to class it among those of which HIPPOCRATES in *Praedict.* 1. 2. f. 2 informs us, that they are benignant and of short duration.

On the contrary we observe, that this illness has a protracted course and is rather serious, as it results from an agglomerating abundance of raw, mucous humours, caused by the cold, impeding the perspiration and the circulation of the blood and, originating from the principal parts of the body, assembles in the intestine.

The cure must be started by purgative enemata to which wild honey is preferably added. In the meantime the body should be prepared with syrups of similar composition. After that, *Ipecacuanha* should be resorted to, as a last anchorage of hope, a sovereign and safe remedy to control this and most of the other forms of diarrhoea, with or without the loss of blood, which no other remedy provided by nature can excel. Not only it drives out safely all the obstinately clogging humours with the feces and sometimes ejects them by stimulating to vomit, thereby diverting them from the affected part, but after that it also has astringent properties.

For not solely the spontaneous vomiting, but also, as HIPPOCRATES observes, that which is provoked artificially can be included in the same aphorism.

It should be prepared in the following way.

Two drams of the root of *Ipecacuanha*, boiled in 4 ounces of appropriate fluid or soaked during one night, from this an infusion is made, with or without the addition of one ounce of oxymel.

The next day the boiling has to be repeated once or twice, according to circumstances, so that it has to be done two or three times in all. Weak patients take this more easily and also this way of preparation heightens the astringent activity of the remedy.

Besides, the *Munday-guaçu* or emetic nuts (which ignorant people not so much use as abuse, because by vomiting and bowel movements, they purge violently) are of no small use, if applied according to the following prescription.

Rec. nucleos sex vel septem; ablata tam interiori quam exteriori tunica, conterantur amygdalarum instar proemulsione, addito momento sacchari et fol. sen. 3j vel 3j℔ seminis anisi in pulverem trita misceantur, fiatque pastillus in furno siccandus. Sic nuces *Andá*, quarum nuclei, etiam citra ullam preparationem, dignitate illis non cedunt.

Syrupus itidem Tabaci optime conducit, iis imprimis quibus humores tenaces absque multo calore peccant. Dein ol. de *Copaiba* guttae aliquot saccharo dissolutae, ori ex ovo sorbili, sive ano per clysterem immittuntur.

Quod si remedia haec enarrata, forte non in promptu sint, eorum locum Mechoacanna, vel pugillus seminis Ricini Americani in spiritu vini macerati, supplere solent; hoc siquidem humorem vitiosum ac redundantem fortius, illud vero benignius educit.

Non parum quoque hoc morbo exhaustos reficit decoctum ligni *Iacarandá*, et *Sassafras indigena*, quod evacuata materia morbifica tonum restituat visceribus languentibus;

comitante diaeta facilis digestionis et paulo astringentis.

Emplastrum super ventriculo imponatur ex *Gummi Içicartiba*, balsamo de *Cabureiba* et *Copaiba*, vel ex pasta de *Tiþioca*, vino de *Acaju*, pulpa item prunorum *Araça* flore *Nhambu*, atque ovorum vitellis.

Adhaec tosta potius quam liquida aut frixa alimenta eligantur, idque saepe et parum.

Vino indantur guttulae aliquot olei cort. arant. praecipue tum, cum ventris cruciatus instar colici adsit, quem vesparum quoque Brasiliensium nidus ex vino potus, vel ventri impositus, clementer mitigat.

Idem feliciter praestant herbae castae in aceto frixae.

Quando necessitas ad magis corroborantia et astringentia compellit, his et similibus remediis nativis, utendum. Summitates fructuum *Bacóba* aut *Banána* semitosta aut arefacta ex vino de *Acaju* et immaturo pomo *Ianipába*.

Testae testudinis fluviatilis tostae rasuram, in hoc fluxus genere, Barbari propinant, quod valida astringant.

Sicut et jecur capreae tostum, et castanea arboris Cedri Brasiliensis.

Rec. 6 or 7 nuts, without inner and outer rind. They are ground, precisely as for almondmilk, a little sugar is added and this is mixed with 1 dram of senna leaves or 1½ drams of aniseed (powdered). A pill is made of this and must be dried in an oven. Also *Andá* nuts should be mentioned, of which the kernels, even without any preparation, are no less active.

Syrup of tobacco is exceptionally useful, especially in those cases where the viscous humours are at fault, without there being a high fever. Then, a few drops of *Copaiba* oil, in which a little sugar is dissolved are consumed with an egg or administered as a clyster.

But if the above mentioned remedies are perhaps not on hand, the Mechoacanna or a handful of seed of the American Ricinus, soaked in wine a most of the times, give satisfactory results; the latter one drives out the bad and abundant humours more forcibly, the first one on the contrary unfolds a mild purging activity.

A decoction of *Iacarandá* wood, and the native *Sassafras*, has a wholesome effect on those who are exhausted by the illness; as it restores the tonicity of the relaxed intestine, after it has driven out the morbid matter.

These remedies should be accompanied by a light, easily digestible diet that restores the tonicity of the intestine.

On the stomach a poultice should be applied of *Gummi Içicartiba*, of Bals. *Cabureiba* and *Copaiba* or of *Tapioca*-paste, *Acaju*-wine, pulp of *Araça*-prunes, *Nhambu*-flowers and egg-yolk.

Moreover dried foods are to be preferred above fluid or baked food, meals should be frequent and small.

A few drops of oil from orange peel are mixed with some wine, especially when there is some colic, which is agreeably relieved by a net of Brazilian wasps in wine, taken as a potion or applied as a poultice.

Fresh herbs ground in vinegar are also excellent.

If it is necessary to use restoratives and astringent remedies these and similar native remedies should be used. The tops of *Bacóba* or *Banána* fruits half roasted or dried, in *Acaju* wine and with unripe *Ianipába* apple.

The natives give the shavings of the roasted shell of a tortoise as a potion to patients with this kind of diarrhoea, because of its strong astringent properties.

Also roasted goats-liver and chestnut of the Brasil cedar.

Rec'd of 7 nuts, without inner and outer rind. They are ground, precisely as for almondmilk, a little sugar is added and this is mixed with 1 dram of scum leaves or 1 1/2 drams of aniseed (powdered). A pill is made of this and must be dried in an oven. Also 4 whd nuts should be mentioned, of which the kernels, even without any preparation, are no less active.

CAPUT XII.

Styru of tobacco is exceptionally useful, especially in those cases where the viscous humours are at fault, without there being a high fever. Then, a few drops of tobacco oil, in which a little sugar is dissolved are consumed with an egg or administered as a clyster.

DE DYSENTERIA.

But the above mentioned remedies are perhaps not on hand, the Mechocanna or a handful of seed of the American Ricinus, soaked

Sequuntur fluxus cum febre et sanguine, ut sunt dysenteria, fluxus hepaticus et inflammatio ani. Affectus dysentericus nimum his terris est familiaris. Oritur potissimum ex sudoribus, vi frigoris nocturni ac venti mediterranei subito admissi retroactis; tum fructuum fugacium et faeculentis potus immoderato usu, accedente aere calido et humido. Haec excretio sanguinolenta licet pari vehementia per omnes Indias saeviat, numquam tamen in Brasilia morbi epidemici instar grassa tam, aliisque per contagium migrasse, constat.

These remedies should be used in the intestine.

On the stomach a poultice should be applied of Gum Arabic.

Ita ut perpetuo nobis sporadica et popularis, nunquam vero epidemia existat: cum alias pertinacissima aliquando malignitas, si in aliquoquam, in hoc morbo imprimis apparet. Quibus excretio biliosa, adusta et spumosa, ut in iuvenibus saepe videre est, merito ab Hippocrate habetur calamitosa atque funesta, quippe quae nullis remediis cedat, licet haec tellus, contra malum tam familiare nobilissima mihi meque vulgaria auxilia medica, producat, et praestantiora industria ac solertia hominum in dies suscitentur. Verum missis iis, quae satis superque iam ante ab aliis de natura et curatione dysenteriae dicta sunt, ea tantum prosequar, quibus potissimum differant ab Europa. Affectui huic (praesertim si multa cacochymia adsit) tot simul solent supervenire symptomata, tamque horridi cruciatus, ut saepissimè angustia rei et temporis legitimam methodum remorentur. Hac itaque necessitate exigente, venam tunc, haud consultum habent; (nisi ipso quidem principio, aut febre atque hepate affecto id maxime postulantibus) quoniam, etiamsi revellendi indicationi forte satis-

lactum estur; male moratae tamen materiae morbilicae et vitium inopie male sit, quia raro occasio debetum reserandi adsit.

CHAPTER XII.

Potro vel solo Rhio, vel laxativo pinova penmissimo morbosum humorem provocasse, partibus affectis et cunctis immutasse, sus-

DYSENTERY.

picione plenum habetur. Si pinova, tamen evacuationi locus, radiorum comitivum, speciem, expulsum, naturae minus, ceteris remediis praestare conducit, pinova ingens inter plurimos me-

Then follows the diarrhoea accompanied by fever and passage of blood, to which the dysentery, the fluxus hepaticus and the inflammation of the anus belong. Especially dysentery occurs very frequently in these parts. It develops especially when the sweat is driven back by the night cold, or by the sudden effect of the South wind, as also by the immoderate consumption of spoil fruit and impure drinks; especially during warm and damp weather. Although this bloody flux is prevalent with equal severity in the whole of the Indies, it is certain that it has never occurred epidemically in Brazil, but has only been transplanted there by contagion from other countries.

Hence, although it is one of the vulgar diseases, and scattered cases continually occur with us in this country, it never assumes the character of an epidemic here, although it does from time to time take on a more obstinately malignant character than any other disease. The bilious, burning and foaming stools which one often sees in young people have been rightly considered by Hippocrates as a suspicious and unfavourable symptom. Although this symptom cannot be wholly overcome by any medicament, there are excellent, although not at all well known medicines, produced by this country, the beneficial action of which on this so well known disease, is being daily enhanced by the experience and ingenuity of the inhabitants of this country. Leaving out the ample communications in literature about the nature and treatment of dysentery, I shall here limit myself to the particularities in which they chiefly differ from what we are accustomed to in Europe. This illness gives rise (especially when accompanied by a great corruption of humours) to so many simultaneous symptoms

factum eatur; male moratae tamen materiae morbificae et virium inopiae male fit, quia raro occasio deperditum resarciendi adsit.

Porro vel solo Rheo, vel laxativo quovis benignissimo mordacem humorem provocasse, partis affectae cruciatus ingeminasse, suspicione plenum habetur. Si quando tamen evacuationi locus, radicem vomitivam *ipecacuanha*, exquisitissimum naturae munus, caeteris remediis praeferre conducit: quamvis ingenue fatear, plurimos medicastros incolas ad sudorifera et cordialia, quam ad evacuantia per alvum, benigniora licet, inclinare, etiam tunc cum maior cacochymiae quam ulcerationis signa appareant. Morbo durante praeter consolidantes, abstergentes et refrigerantes clysteres, nutrimentis et anodynis ex iusculo gallinarum hordeaceo aut furfuraceo, lacte caprino chalybeato et similibus insistendum.

Prae caeteris pulmento ex *Tapioca* et emulsionibus inde factis, quod multis indicationibus satisfaciant, utendum per inferiora aequae ac superiora: quippe mirifice consolidante et refrigerante qualitate partes afflictae demulcent, fluxiones quoque ruentes compescunt atque coagulant, et orificia venarum claudunt.

Quodsi necessitas ulterius insurgat, viribus corroborandis et sistendis fluxibus invigilandum, scilicet opiatibus: tum medicamentis quoque et alimentis astringentibus, consolidantibus, imprimis quae lumborum, ventris et jecinoris refrigerio et robori sunt.

Praeterea singulis vicibus quibus alvus dejicitur, fomenta ex iisdem parata ammittantur, unde putredines et calores, vel praesentes, vel futuri avertantur. De quibus latius dicitur in capite de inflammatione ani.

Potus quo aeger utatur, ptisana sit, ex decocto de *Carimá*. Ovum quoque sordile cum tribus quatuorve guttulis oleo *Copaiba* conducit, quod leniendo simul partes laesas consolidet, ac proinde totidem guttulae cum albumine ovi ex bombace ano inditae vel per Clysterem iniectae solamen adferunt. Assata elixatis praeferantur. *Pacóba* et

and such dreadful pains, that the pressing danger leaves no time for a treatment, guided by the methodic rules of science. Nor do the native doctors hesitate for a moment, in such a case of emergency, to open a vein (though this is not according to the rule that either fever or an affection of the liver in the first place require such treatment) since, even if the indications to remove the disease products were followed sufficiently, yet the malignant nature of these products.

Therefore it must be remembered that in trying to remove the sharp humours with rhubarb or some other mild laxative, the suffering of the diseased parts is augmented. Hence when there is indication for a drastic removal of the morbid matter it is better to choose the emetic, *ipecacuanha* root, that excellent present of Nature; although I must honestly confess that very many native specialists, even when the symptoms point to a cacochymia rather than to an ulceration, are more inclined to give sweat promoting and heart strengthening medicines than even the mild laxatives. In a later stage of the disease one must give astringent, cleansing, and cooling enemas, and also restoratives which relieve the pains, such as chicken broth with barley and oats, goat's milk in which red hot iron has been cooled, and such things.

Tapioca as food, especially tapioca milk pudding, can be strongly recommended for these cases, administered by the mouth and also as an enema, because of its strengthening and cooling qualities, exercising a softening influence on the inflamed parts, stopping the diarrhoea and closing the opened bloodvessels.

When it is very urgent to ensure the recovery of strength and the stoppage of the diarrhoea, opium containing medicines are of course necessary, but also along with them nutrition and remedies that contract and keep the parts together cool and strengthen the loins, the abdomen and the liver.

Besides this, one must take care when stools have been passed to put poultices on those parts, in order to counteract the threatening rotting and inflammation. I shall treat of this more in detail in the chapter on the inflammation of the anus.

The patient can take as drink a slimy decoction of *Carimá*. Also a soft boiled egg with three or four drops of *Copaiba* oil has a favourable influence, as it works as a sedative, at the same time strengthening the diseased parts. The same number of drops added to the white of an egg, administered as an enema, give relief. Roast meat is

Banána semitostae, saepe pro alimento medicamentoso accipiuntur. Idem quoque frictus dissecantur et in sole siccantur, atque in massam, addendo aceti momento, coquantur loco panis. His accedunt plurima alia remedia nativa; astringendi simul et refrigerandi qualitate pollentia, quae primi incolae partim ut arcanæ celant, secumque interire cupiunt, partim innotuere et in tractatu de simplicibus tradita sunt. Horum quidem primum locum obtinent, *Conservae* et *Rob. fructuum Myrti Granatorum*, utriusque *Araça*, *Guajába*, *Mureçi*, *Murucujá*, *Janipápa*, *Acajú*.

sharp humours with third of some other mild laxative for of the diseased parts is augmented. Hence when there is indication for a drastic removal of the morbid matter it is better to choose the emetic, a cathartic too, that excellent present of Nature; although I must honestly confess that very many native specialists, even when the symptoms point to a cachexy, rather than to an ulceration, are more inclined to give sweet promoting and heart strengthening medicines than even the mild laxatives. In a later stage of the disease one must give astringent, cleansing, and cooling enemata, and also testostives which relieve the pains, such as chicken broth with barley, and oats, roasts milk in which red hot iron has been cooled, and such things.

Tapioca as food, especially tapioca milk-budnik, can be strongly recommended for these cases, administered by the mouth and also as an enema, because of its strengthening and cooling qualities, exerting a softening influence on the inflamed parts, stopping the diarrhoea and closing the opened bloodvessels.

When it is very urgent to ensure the recovery of strength and the stoppage of the diarrhoea, opium containing medicines are of course necessary, but also along with them nutrition and remedies that contract and keep the parts together cool and strengthen the joints, the abdomen and the liver.

Besides this, one must take care when stools have been passed to put poultices on those parts, in order to counteract the threatening rotting and inflammation. I shall treat of this more in detail in the chapter on the inflammation of the anus.

The patient can take as drink a stinky decoction of Camimé. Also a soft boiled egg with three or four drops of Copahu oil has a favourable influence, as it works as a sedative, at the same time strengthening the diseased parts. The same number of drops added to the white of an egg, administered as an enema, give relief. Roast meat is

better than boiled meat. Lightly roasted *Pacóba* and *Banána* must be mentioned as foodstuffs, possessing healing properties. One can cut up these fruits into small pieces and dry them in the sun, after which one can add a little vinegar to the dried mass and then bake bread of it. We can add to this a list of native medicines which are supposed to contract and cool the parts. The original inhabitants keep some of these medicines to themselves, evidently wishing that their secret should go with them to the grave, but we have been able to make notes of others, so that we could discuss them in our treatise on the simple remedies. The chief of these are the preserved or jellied fruits *granata*, *araça*, *guajába*, *mureçi*, *murucujá*, *janipápa* and *acajú*.

Lues phagedæica ex coitis non latuit per contagium, vel parentum hæreditario malo in liberos, sed ex leviori affeetu atque per se con- trahitur, orta potissimum ex alimento foetido et sasso, potu tancto corrupto. Inter Afros non solum atque Americanos, sed Latinos et Belgas duodecim avari, tumorbudus scitiphos et virulentis ulce- ribus totum corpus infestat. Quae quidem lues huic regioni est Endemica, et Belas ab Hispanis, atque Viris a Brasilianis appellatur. Et sicut citius sanatur a solis remediis indigenis, ita citius contra- minat, quam illa duae lues Gallica vulgo vocatur et ad Nicolas hoc delatur. De pus dicere non est propositi mei, sed de presentia, quae licet in pueris sanis conveniat cum illa; accidentibus et curatione tamen maxima ex parte dillet. Impidici initio hata opera tam negligunt, humoresque tunc in duo mali homines maxime in- haret, alii non sequuntur inervallum redunt et præparationem, credunt. Vitam interitum in tentam vivere interdicunt, apud calidæ lavacra institunt, frigida nocturnum, ne perspiratione cohibea- tur, maximo potere arcent, carnes recedunt, impitimus ferinas, totas, præcipiunt. Vini perimitunt, quod sudores et fulgines, non sine æstus levamine, per poros exelleret compertant. Quod hoc medendi modum obidibunt, symptomatamamini quidam rempore levamen allatur, sed postea recidivam attumque dolores successuros, ratum habent. Tandem præparato hoc modo corpore, evasationes insti- tuunt: mox eos, qui præsertim tenuiori sortis sunt, ad molendinas saccharas igitur luctuissimos aplegat; et solo decocto, cuius basis Carabæ et sapçafarilla, curationem lelicissime absolunt. Utera propus solo altitum aut lotionem Carabæ, aliarumque herbarum existantium et apstetegitum succo, tollunt, foliis autem Carabæ

CAPUT XVI.

DE LUE INDICA.

Lues quaedam ex coitu non tantum per contagium, vel parentum haereditario malo in liberos, sed ex leviori attactu atque per se contrahitur, orta potissimum ex alimento foetido et salso, potu rancido et corrupto. Inter Afros non solum atque Americanos, sed Lusitanos et Belgas quoque saevit, tumoribusque scirrhis et virulentis ulceribus, totum corpus infestat. Quae quidem lues huic regioni est Endemia, et *Bubas* ab Hispanis, atque *Miá* a Brasilianis appellatur. Et sicuti citius sanatur a solis remediis indigenis, ita citius contaminat, quam illa quae lues gallica vulgo vocatur et ad Incolas huc defertur. De qua dicere non est propositi mei, sed de praesenti, quae licet in quibusdam conveniat cum illa; accidentibus et curatione tamen maxima ex parte differt. Empirici initio data opera eam negligunt, humorisque tenacitatem, in quo mali fomes maxime inhaeret, aliquot septimanarum intervallum requirere ad praeparationem, credunt. Vitam interim intemperatam vivere interdunt, aquae calidae lavacra instituunt, frigus nocturnum, ne perspiratio cohibeatur, maximopere arcent, carnes recentes, imprimis ferinas, tostas, praecipiunt. Vinum permittunt, quod sudores et fuligines, non sine aegrotantis levamine, per poros expellere comperiantur. Qui ab hoc medendi modo recedunt, symptomatum quidem pro tempore levamen allatueros, sed postea recidivam artuumque dolores successuros, ratum habent. Tandem praeparato hoc modo corpore, evacuationes instituunt: mox eos, qui praesertim tenuioris sortis sunt, ad molendinas sacchareas ignesque luculentissimos ablegant; et solo decocto, cuius basis *Caaróba* et *Sarçaparilla*, curationem felicissime absolvunt. Ulcera quoque solo attritu aut lotione *Caaróba*, aliarumque herbarum exsiccantium et abstergentium succo, tollunt. foliis autem *Caaróba*

CHAPTER XVI.

INDIAN LUES.

It is possible to be infected here by a kind of lues not only by direct infection, or as is the case with children, in the form of an inherited affection, but also by the slightest touch, or even without there being any such a cause, the origin of it being attributed to the eating of spoiled and salted food, and stale and impure drink. It is not only prevalent among the negroes and Indians but also among the Portuguese and Dutch, the whole body being covered with hard swellings and malignant ulcers. This affection is an endemic disease in these parts, and is called *Bubas* by the Spanjards and *Miá* by the natives. And although it is more quickly healed by the native medicines than the disease called French pox, which has been brought here, infecting the natives, it is more infectious than the last mentioned. I do not intend to speak about the latter disease but about the former, which, it is true, is like the latter in some respects, in its symptoms and in the way it has to be treated, yet in reality differs very much from it. In the beginning the native doctors pay very little attention to it since they believe that the tough, tenacious fluids which are the chief cause of the affection, take about seven months to develop. They prescribe during this time a regular life, and warm ablutions, and try to avoid the night cold so as not to interfere with perspiration. They prescribe the eating of fresh meat, especially game, and toast, and allow the drinking of wine, since they are convinced, that this drives the sweat and the bad vapours out through the pores, to the great relief of the patient. They are convinced, that they, who neglect this treatment, may have a period during which the symptoms of the disease may be temporarily alleviated, but that it will be followed by a new attack accompanied by pains in the joints. After having prepared the body

nunc coctis pro balneo, nunc ore jejuno masticatis, ulcera, quae per se non evanescent, exsiccant, et malignitatem extrahunt. Quod ipsum aliquoties per chirurgos in nosocomio imitari iussi, et voti nos compotes reddidit.

CHAPTER XVI

INDIAN LIFE

Nequis autem fallatur, haec lues sive ex Hispanica mixta, ut saepe sit, sive simplex Endemia, Europaeis praesertim, non adeo parvi facienda sive in principio sive in progressu. Neque enim ut quidam existimarunt, intra Tropicos levior ob halituum a sole perpetuam extractionem; gravior tantum in septentrionalibus regionibus datur. Ac si nocturnum frigus modo leviter admissum, apertos diurno calore poros non cum summo detrimento aegri altius occluderet, discussionem tetrorum vaporum impediret, versusque periostium, in quo dolor, repelleret. Sicut quotidie fit, vel aegrorum vel medicorum incuria, qui differentias diei et noctis contemnunt. Et tunc quidem male morata ulcera, quibus hoc male infestati turpiter scatere solent; praeter alia symptomata, cariem in ossibus causari videas. Sicut in reiteratis dissectionibus corporum autopsia nos docuit. Atque tunc simul anatomiae, in Aethiopibus exerciti gratia institutae, certos nos fecere, nigredinem illam cutaneam ultra epidermidem non penetrare; eaque ablata mox ipsam cutem albam Europaeorum plane more se offerre. Si vero contigerit aliquos epidermide alba nasci (sicut in puella et iuvene pilis crispis et oculis caesiis ex Nigritis natis videre licuit) inter naturae monstra recensentur, adeoque ob albedinem conterraneis suis contemptui existunt, quam si nigra cute aliqui Europaei nascerentur.

Sed missa hac digressionem ad institutum redeo, pauca additurus quae de Gonorrhoea notatu digna existimavi. Gonorrhoea simplex, sicut haud difficilis habetur curationis, ita facile acquiritur, modo a

in this way, they then proceed with the cleansing process, in the case of poor people, by sending them to the overheated sugar mills, and then, with a decoction of *Caaroba* and *Sarçaparilla*, they are able to effect a successful cure. They heal the sores by bathing them with the juice of the *Caaroba* or by washing them with the same, or with that of other desiccative and cleansing herbs. They treat the sores, which persist, with a bath made of a decoction of the leaves of *Caaroba*, or by putting the chewed leaves on the sores, which draw but the poison from them. I have repeatedly had this done by the doctors in our hospital when the results came up to our expectations.

Let no one think that this infection, whether mixed with the Spanish pox, or endemic of an exclusively native character, especially in Europeans, at the beginning, and also in its further course needs little care; nor that, as some people think, it is less serious in the tropics, because of the continual perspiration due to the heat; whereas it would be more serious in Northern regions. If the night cold gets in, it can, to the great detriment of the patient, absolutely close the pores, which have been opened by the heat of the day, so preventing the passage of bad vapours, pressing them back to the periosteum, which is then painfully affected, a circumstance which occurs daily through the carelessness of patients and doctors, who pay no attention to the difference between day and night.

Then one sees, besides other symptoms, that the slowly healing sores which cover the body of those affected by this plague, are the cause of bone caries: as we have repeatedly found at postmortems.

These autopsies which we did on niggers, in order to increase our knowledge, have also convinced us that the black colour of their skin is limited to the upper layer of the skin, and that when we had removed that, there was a white skin layer visible, exactly like that of Europeans. When, however, children are born with a white skin (as I once saw a girl and a boy with curly hair and bluish eyes, of black parents) then they must be looked upon as monstrosities, and they are despised on account of their light colour, just as much as a European would be despised who was born with a black skin.

After this little interruption I shall return to my subject and shall add some remarks about the gonorrhoea, which I think worth mentioning. This disease is easily cured, and just as easily contracted

diuturna equitatione sub aestu meridiano. A purgantibus initio sibi cavent in omni Gonorrhoea, sive virulenta sive non virulenta. Tam salutaria contra hunc affectum domi nanciscuntur remedia Incolae, ut raro in exotica, quae in officinis prostant, inquirere illis necessum sit. Praeferunt, *Guabipocaiba*, Lusitanis *Pao Podre*, quam ego arborem siliquosam, in tractatu de Simplicibus, appellavi.

Eius radix in taleolas dissecta et in aqua ex canna saccharea destillata, macerata, aërique exposita, eam abstersoria et diuretica qualitate imbuit, quae mane et vesperi pota, parastatas et renes insigniter mundificat. Cavendum tamen ne immodice hoc medicamento valido utare, quod sanguinem ducat. His accedit *Iuripéba*, Canna silvestris *Iacuacanga* dicta, radix item *Laborandi*, quae noctu sub dio macerata in aqua fontana diluitur, eiusque diluti quatuor plus minus unciae per quindecim circiter dies bibuntur, unde renes et vesica repurgantur. Post haec pro potu quotidiano, eiusdem cannae silvestris decocto utuntur. Atque alternatim ob calores suscitatos, mane ptisanam seu liquorem ex *Tipiôca* exhibent. Dilutum radices de *Aguaxima*, *Iacuacanga*, *Pagimiriôba*, *Caapomonga*, emulsiones ex *Tipiôca*, nuce Coco recenti, et seminibus frigidis, cannaeque sacchareae aqua praeparatae, familiaria illis sunt remedia. Contra inflammationes lotii, post frigidam dorsi et perinaei inunctionem, genitalia emollientibus fomentant, nempe decocto summitatum *Imbaiba*, et *Tupeicáva*, floribusque malvae Americanae et Fabarum vulgarium, atque id genus aliis. Calorifica vero, tam a medicamento quam cibis procul esse iubent, ne virulentia et incendium invalescant. Ego tamen nimium refrigerantium usum aliquando noxam intulisse expertus sum, quod tonus genitalium inde debilitetur. Semper enim condonandum est Empiricis, utpote diligentioribus in exhibendis medicamentis quam in distinguendis morborum causis. Quippe sicut ex his medendi formulis apparet, Profluvia geniturae cum Gonorrhoeis videntur confundere. Quod qui evitare velit, adeat PLATER *Obs.* pag. 729. LANG. *Epist.* 2.I.5. SOLENAND. pag. 199.V.45. HOFM. pag. 540.

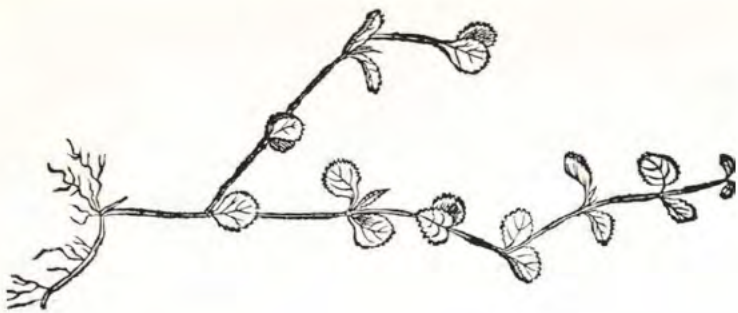
here, even by riding on horseback in the daytime in the tropical heat. In the first stage they avoid purgatives, strong ones as well as weak ones. The natives possess such effective remedies against this complaint, that they do not need the foreign remedies in our dispensary. They choose the *Guabipocaiba*, called by the Portuguese the *Pao Podre*, which in my treatise about the simple medical remedies, I have called the pop bearing tree.

When the root of it is cut into thin pieces, and then extracted in the juice of cane sugar, and exposed to the air, this juice is endowed with cleansing and diuretic qualities, so that, if it is drunk in the evenings and in the mornings, it washes out the testes and the kidneys. One has to take care that this strong medicine is used in moderation, since it may cause bleedings. Other medicines belonging to this class are *Iuripéba*, the sugar cane growing in woods called *Iacuacanga*, and also the *Laborandi* root which is extracted in spring water during one night, after which during a fortnight, about four Dutch ounces of it are drunk daily, to cleanse the kidneys and bladder (four Dutch ounces = 13—14 English ounces). After that they take a decoction of the wild sugar cane as a daily drink. To counteract the heat engendered by this, they alternate it with a thin gruel or a drink, made of *Tipiôca*, which is taken in the morning. A decoction of the root *Aguaxima*, *Iacuacanga*, *Pagimiriôba*, *Caapomonga*, or a drink made of *Tipiôca*, fresh cocoa nut, cold seeds and water prepared from manna, are their usual remedies. To alleviate the soreness of micturition, they rub the back and perinaeum with cooling remedies, and treat the sexual organs with softening poultices, made of the leaf buds of *Imbaiba* and *Tupeicáva*. the flowers of the American mallow and of the ordinary beans and other such like herbs. In medicines and foods they avoid anything with stimulating and heat producing properties, which would increase the malignancy and inflammation. I have, however, noticed that too much use of cooling remedies were sometimes harmful, as these diminished the normal tension of the sexual parts. One ought not to judge the native doctors too severely for applying themselves rather to the administration of healing remedies, than to the diagnosis of the cause of the disease. As will be seen from these prescriptions they seem to confuse a genital secretion with gonorrhoea. Those who wish to avoid this mistake can get light on the subject from PLATER. *Obs.* pag. 729,

here, even by riding on horseback in the daytime in the tropical heat.
Quocirca in Gonorrhoea virulenta malignitate exturbata subsistunt
peritiores, quando indicatio astringendi, consolidandi, et liscicandi est.
Quod quidem optime sit: balsamo Copaiba, saccharo vel oleo olivarum
dissoluto atque per os et penem injecto.

I have called the pop bearing tree.
 When the root of it is cut into thin pieces, and then extracted in the
 juice of cane sugar, and exposed to the air, this juice is endowed
 with cleansing and diuretic qualities, so that if it is drunk in the
 evenings and in the mornings, it washes out the testes and the kidneys.
 One has to take care that this strong medicine is used in moderation,
 since it may cause bleedings. Other medicines belonging to this class
 are *Lupulus*, the sugar cane growing in woods called *Lacuncula*, and
 also the *Laborada* root which is extracted in spring water during one
 night, after which during a fortnight, about four Dutch ounces of
 it are drunk daily, to cleanse the kidneys and bladder (four Dutch
 ounces = 13-14 English ounces). After that they take a decoction
 of the wild sugar cane as a daily drink. To counteract the heat engendered
 by this, they alternate it with a drink, made of
Typhoid, which is taken in the morning. A decoction of the root
Agmatina, *Lacuncula*, *Pugionaria*, *Campyloga*, or a drink made
 of *Typhoid*, fresh cocoa nut, cold seeds and water prepared from
manna, are their usual remedies. To alleviate the soreness of mictu-
 tion, they rub the back and perineum with cooling remedies, and
 treat the sexual organs with softening poultices, made of the leaf buds
 of *Lupulus* and *Typhoid*, the flowers of the American mallow and
 of the ordinary beans and other such like herbs. In medicines and
 foods they avoid anything with stimulating and heat producing
 properties, which would increase the malignancy and inflammation.
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 sometimes harmful, as these diminished the normal tension of the
 sexual parts. One ought not to judge the native doctors too severely
 for applying themselves rather to the administration of heating reme-
 dies, than to the diagnosis of the cause of the disease. As will be
 seen from these prescriptions they seem to confuse a genital
 secretion with gonorrhoea. Those who wish to avoid this mistake
 can get light on the subject from *PATER Obs. pag. 250.*

Caa-ataja



Ipecacuanha



LANG. *Epist.* 2.1.5, SOLENAND. pag. 199, V. 45. HOFM. pag. 540.

As to the malignant gonorrhoea all who have some experience are unanimous in thinking that when the acute symptoms have been subdued, the time has come for the administration of contracting, strengthening and desiccative remedies, and the best materia to use for these purposes are *Copaiba* balsam, which dissolved in sugar, or olive oil must be taken internally as well as injected into the penis.

CAPUT III

(Caa-āpīā), (Pecacuanha), et (Caa-āpīā).

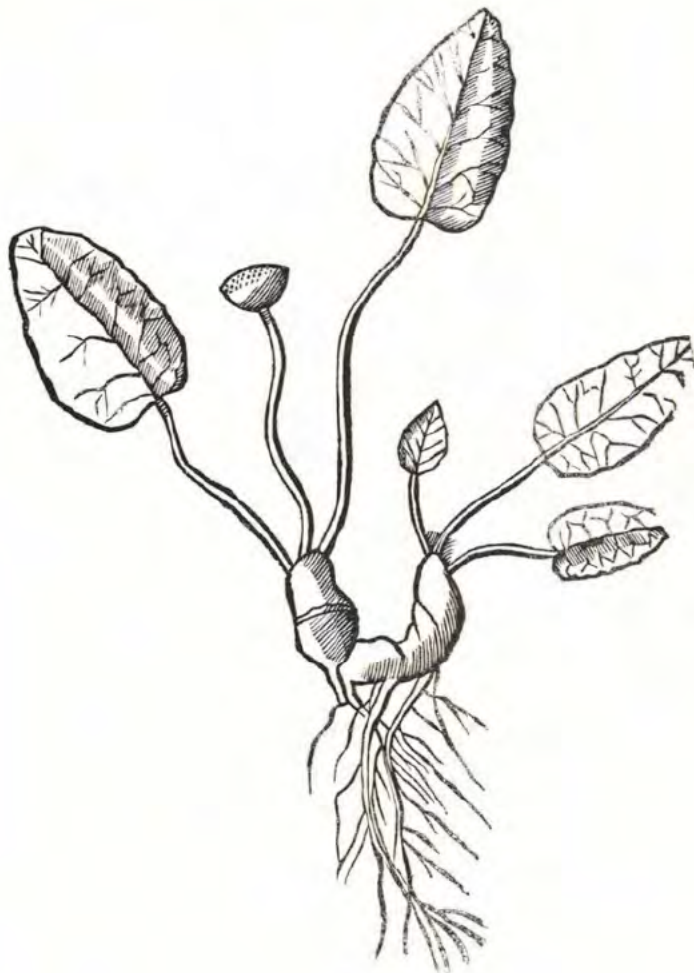
In pratis uliginosis et apricis campis elegans planta Caa-āpīā reperitur. Lusitaniae Fera de Ferra de Joao Para dicta. Unico tenuis-
simo quadrangulati caule, vix palmare altitudine assurgit, semper laete
virescenti, partim terrae incumbens, adgenicula iterum in terram
radices agens parvas, partim erecta stans. Ad quodlibet geniculum
ulno foliola sibi opposuntur. Numinulatae figurae et magnitudine se-
rectis Ternariae aut Chamaedryos, in ambitu serratae, et pallide
viridibus. Ad quodlibet foliorum fasciculum minimus provenit, quasi
galeatus, albus. Post hunc sequitur siliqua grani aversae magni-
tudine et figura, quae sponte se apertis, semen effundit minimum,
rotundum, obscure flavum, minus semine papaveris minimi. Nullius
odoris est planta, sed saporis amari.

Radicis est fibrosa, tenui, parva, subamari saporis.

Inter nobilissimas et vere medicinales purgantes et aperientes haec
herba merito censetur a peritioribus locis: a vulgo proano vix
cognita, et nonnumquam in usum applicata: utpote cuius manipulus vix tuto
permittitur tam efficax medicamentum.

Quippe illius decoctum vel succus, tum duodecim pulvis, si exsiccatum,
pauca purgantia exhibitis, tam valide vires movet, ut non impune
ab omnibus capiat. Ego succum recentem expressum ad 3 j. circiter
ex convenienti dilutione propinatum, mensuras et urinam, tum duodecim
excrementa per alvum satis vehementer alidando extirpare op-
erari.

Sparsim ad decantatas has salutiter radices ordi nos
debuit, quae praeter facillimum purgaticum per apertiores et interiores



Caa-āpīā.

LIBER QUARTUS

DE ARBORIBUS, FRUCTIBUS ET HERBIS MEDICINALIBUS,
AC ALIMENTOSIS, IN BRASILIA ET CIRCUMJACENTIBUS
INDIAE OCCIDENTALIS REGIONIBUS NASCENTIBUS.

CAPUT LIII.

CAA-ATÁJA, IPECACUÂNHA, ET CAA-APIÁ.

In pratis uliginosis et apricis campis elegans planta *Caa-atája* reperitur: Lusitanis *Erva de purga de Joan Pays* dicta. Unico tenuissimo quadrangulati caule, vix palmarum altitudine assurgit, semper laete virescens, partim terrae incumbens, ad genicula iterum in terram radices agens parvulas, partim erecta stans. Ad quodlibet geniculum, duo foliola sibi opponuntur, Nummulariae figura et magnitudine seu rectius Veronicae aut Chamaedryos, in ambitu serrata, et pallide viridia. Ad quodlibet par foliorum flosculus minimus provenit, quasi galeatus, albus. Post hunc sequitur siliquula grani avenae magnitudine et figura, quae sponte se aperiens, semen effundit minimum, rotundum, obscure flavum, minus semine papaveris minimi. Nullius odoris est planta, sed saporis amari.

Radice est fibrosa, tenui, parva, subamari saporis.

Inter nobilissimas et vere medicinales purgantes et aperientes haec herba merito censetur a peritioribus Incolis: a vulgo profano vix cognita, et nondum in usus applicata: utpote cuius manibus vix tuto permittitur tam efficax medicamentum.

Quippe illius decoctum vel succus, tum quoque pulvis, si exsicceetur, pauca quantitate exhibitus, tam valide menses movet, ut non impune ab omnibus capiatur. Ego succum recenter expressum ad 3 j. circiter, ex convenienti liquore propinatum, menstrua et urinas, tum quoque excrementa per alvum satis vehementer aliquando exturbasse observavi.

Ipecacuânha. Tandem ad decantatas has salutiferas radices ordo nos deducit, quae praeter facultatem purgatricem per superiora et inferiora,

FOURTH BOOK

DEALING WITH THE TREES, FRUITS AND HERBS, USED
FOR MEDICINAL PURPOSES AND FOR FOOD,
WHICH GROW IN BRAZIL AND THE AD-
JOINING COUNTRIES OF THE WEST INDIAS.

CHAPTER LIII.

CAA-ATÁJA, IPECACUÂNHA AND CAA-APIÁ.

In damp meadows and sunny fields one can find the beautiful plant *Caa-atája*, called by the Portuguese: *Erva de purga de Joan Pays*. It grows with a single very thin and square stalk and gets scarcely as high as a palm of the hand; it has a clear green colour and lies partly on the ground, while the rest of the stalk bends upwards and in the place where it does so, sends out little roots into the ground. At every bend there are two little leaves, opposite to each other, on the stalk. They are as large and have the same form as money wort or rather as veronica or speedwell, have a sawed edge and are light green in colour. In the same place as every pair of leaves, there is a white helmet shaped little flower. The little pod-like fruits growing out of it are like grains of oats in form and size, and when they open little round seeds appear, dark yellow in colour and smaller than the seeds of the smallest poppy. This plant has no smell but a bitter taste.

The root is fibrous, thin and somewhat bitter to the taste. Although the more experienced natives rightly consider this plant as one of the most effective and trustworthy laxative herbs, it is hardly known by the lower classes, and is not used by them: such an effective remedy would indeed not be safe in their hands.

A decoction of this plant as well as the juice or the dried powder administered in a small quantity, brings on the menstruation so acutely, that it cannot be used by everyone with impunity. I have seen that the fresh pressed out juice given in the dose of about 3 j. in a suitable fluid, sometimes not only excited the passage of menses and urine but also a violent passage of the stools.

Ipecacuânha. Lastly I must praise the curative roots which together with the power to cleanse the body by vomiting and purging, also

omni veneno eximie adversantur. Nec credo, praestantius remedium adversus plurimos morbos ex longa obstructione ortos, imprimis in ventris fluxibus medendis, in hisce terris reperiri facile.

Duae existunt species, neutra a nemine, quod sciam, descripta, earumve qualitates, eximiae in lucem protractae. Utraque eidem usui dicata, sed gradibus facultatum, tum et facie, et natali solo, differunt. Una enim earum humi depressa, exiguior in pratis crescit, Pugelio non admodum dissimilis, nam caulis foliis lanuginosis exsurgit multis, albisque flosculis cingitur: radix illius est crassa, filosa, albicans, a Lusitanis ad differentiam, *Ipecacuanha Blanca* dicta, quae quod minus turbet corpus, et venenis validissime resistat, aequè pueris ac gravidis exhibetur.

Altera, cuius Iconem hic damus, est longitudinis semicubitalis, trinis vel quinis tantum foliis ornata. Gaudet locis opacis, et tantum in densioribus reperitur nemoribus. In summitate caulis baccas producit nigras, sed paucas. Radice est tenui, tortuosa, nodosa, fuscioris, saporis ingrati, amari, calidi et acris. Exsiccata in multos annos reservatur, nec facile vires deponit antidotales, sudoriferas, sed quidem vomitivas. Eius in pulverem redactae dosis est drachma; in infuso, drachmae, plus, minus duae. Facultatem habet abstergendi, meatus reserandi, ac infarctus exsolvendi.

Utriusque quotidianus est usus, malunt tamen dilutum, quod vel unius noctis sub dio maceratione aut coctione in aqua, medicam suam virtutem abunde liquoribus communicet. Postea caput mortuum reservatum, denuoque eodem modo praeparatum, in eundem usum exhibetur; minus quidem efficax ad purgandum vel vomendum, sed magis adstringens. Ita ut radix haec non solum materiam morbificam, licet tenacissimam, a parte affecta revellat, eamque per superiora expellat, sed et astringendo viscerum tonum restituat. Praeterquam enim quod fluxibus ventris, aliisque morbis medeatur, venenis adversatur, virusque, tum occulta qualitate, tum manifesta, per vomitum statim expellit. Quamobrem religiose a Brasiliensibus reservatur, qui illius virtutes primi nobis revelarunt.

Caa-apia. Secretum huius herbae Lusitanis debemus, qui nobis

possess the property of a valuable antidote. I really do not believe that it would be easy to find a more excellent remedy in these parts for most of the illnesses arising from a long continued obstruction, still less for the purpose of curing the diarrhoea.

There are two kinds, neither of which, as far as I know has, ever been described by anyone. Still less has attention ever been paid to their excellent properties. Although both are suitable for the same purpose, they differ in the strength of their curing properties, as also in the places in which they occur and in their appearance. The first kind is the smaller, it grows lying along the ground and occurs in meadows. It is like flea bane having on its stalks many hairy leaves, and bearing flowers placed in the form of a wreath, the root is thick, fibrous and whitish, so that it is distinctively called by the Portuguese *Ipecacuanha Blanca*. Since it is an excellent anti-poison, and yet does not violently, upset the body it is administered to children and pregnant women.

The other plant of which we have given an illustration here, is rather more than a foot long and bears only from three to five leaves. It chooses shady places and is only found in dense woods. At the top of the stalk it has a few black berries. The root is thin, twisted, knotted, yellow in colour and has a disgusting, bitter, hot and sharp taste. When dried, it can be preserved for many years, not easily losing its properties, as an antidote and an antidiaphoretic although it does lose its emetic properties. When rubbed to a powder the dose is about one drachm, in an infusion about two. It has the power to cleanse, to relax the openings of the body and to resolve obstructions.

It is given regularly in both forms; as a rule the fluid form is chosen, since a watery extract of this root (after standing a night in water or when boiled in water) contains a rich amount of its medicinal properties. After this the remaining caput mortuum can be again prepared and administered in the same way, this being less active as a purgative and an emetic than as an astringent; so that this root does not only detract the noxious matter, even the most obdurate from the affected places and gets rid of them by causing vomiting, but also renews the healthy tension of the fibres of the intestines. Besides being able to cure diarrhoea and other diseases, it acts as an antidote and can, by reason of its hidden, and also by its natural properties immediately effect the elimination of all poisons through vomiting.

Caa-apia. We owe our knowledge of this herb to the Portuguese

eam suppeditarunt. Pusilla est planta et depressa, sed quae humilitatem praeclaris dotibus abunde compenset. Ex radice enim pennam olorinam crassa, verrucosa, filamentis ad latera, et inferius tenuibus praedita, exterius e griseo flavescens, interius alba, tres vel quatuor pullulant pediculi, teretes, qui quilibet unicum folium sustinent, obrotundum vel oblongum, tenerrimum, superius splendide viride inferius paulum albicans, habens nervum et inferius venas transversum conspicuas.

Florem fert in proprio pediculo rotundum, umbilici figura, floris Bellidis aemulum, multis staminulis constantem, ex quo semen provenit minus Sinapi. Radix eiusdem fere cum *Ipecacuánha* praestantitae et efficaciae, unde et *Ipecacuánha* abusive a quibusdam appellatur. Cuius vicem in vomitu ciendo, et alvi profluvio compescendo egregie supplet. Eo tamen discrimine observato, quod primam suam dignitatem a virtute antidotali sortiatur, quam an aliunde mereatur, nisi quod viscera terris fuliginibus liberet, mihi nondum experiri licuit. Radix primum haud manifesto sapore est praedita, sed mansa, quodammodo acris est, et relinquit in lingua vellicantem humorem.

Differt porro ab *Ipecacuánha*, quod ad vomitum proritandum minus sit valida, nec pari efficacia humores peccantes per superiora exturbet: quo sit, ut radix, quae odore et sapore alteri cedit, maiori quantitate exhibeatur.

Indigenae integram plantam contundunt, et succo praelibato virus a ventre excludunt: a colubris laesi, aut sagittis venenatis percussi, eundem, antidoti loco, vulnere instillant non sine successu.

Datur hic et alia *Caa-apiae* species, priori per omnia similis, exceptis foliis; quae quidem eiusdem sunt figurae, sed in ambitu serrata et hirsuta: pediculum horum raris vestiuntur pilis. Florem fert in proprio pediculo rotundum cum umbilico in medio, instar floris Chamomeli.

who told us about it. It is very small, grows low down near the ground, but makes up for its lowly appearance by its excellent qualities. The root is as thick as the quill of a swan's feather, knotted, covered with thick fibres at the sides and with thin ones underneath, grey yellow in colour on the outside, and white inside. Three or four thin stalks spring from it, each of which bears a delicate small roundish or more oblong leaf, bright green on the top, and underneath whitish in colour, provided with a middle vein, while underneath veins, running cross-wise, can be seen.

It bears white flowers, each on its own stalk, in the form of a umbilicus like the daisy, consisting of many small little pistils from which seeds are separated even smaller than mustard seeds. Its root is as effective and beneficial as that of *Ipecacuánha* so that it is sometimes falsely called by that name. It can take the place of the latter to obtain vomiting and the passage of stools, but there is this difference, that its antidotal properties must be considered its chief value. Whether it has other powers than that of freeing the intestines from rotting offal, I have not had the opportunity of finding out. This root has at first no definite taste; when it is chewed it is a bit sharp and gives off a juice that irritates the tongue.

The root also differs from the *Ipecacuánha* in that it less violently evokes vomiting and so is not so effective in getting rid of the noxious matter in this way, so that, having less smell and taste, it has to be taken in larger quantities than its competitor.

The natives crush the whole plant and take the liberated juice thus obtained as a remedy for poison which has penetrated the body; if they have been bitten by an adder, or, wounded by poisonous arrows, they wet these wounds with this juice and on the whole with good results.

There is another sort of *Caa-apia* altogether like the former, with the exception of the leaves, which indeed have the same form, but have sawed and hairy edges. The stalk is covered with scattered hairs. It bears a single flower on its own stalk, sunk in the centre, like the camomile.