Purple (S.S)

# OBSERVATIONS

ON SOME OF THE

# REMEDIAL PROPERTIES

OF

# SIMABA CEDRON,

AND ON ITS

## Employment in Intermittent Fever.

BY

S. S. PURPLE, M.D.,

LATE PHYSICIAN TO THE NEW YORK DISPENSARY; MEMBER OF THE NEW YORK ACADEMY OF MEDICINE; OF THE NEW YORK PATHOLOGICAL SOCIETY; OF THE AMERICAN MEDICAL ASSOCIATION; OF THE NEW YORK HISTORICAL SOCIETY; HONORARY MEMBER OF THE NEW YORK STATE MEDICAL SOCIETY; CORRESPONDING MEMBER OF THE EPIDEMIOLOGICAL SOCIETY OF LONDON, ETC.

With Illustrations.



NEW-YORK:
SAMUEL S. & W. WOOD.
1854.

# Practical Observations on the Remedial Properties

OF

# SIMABA CEDRON.

It will be remembered by those who take especial interest in investigations which relate to vegetable materia medica, that about 1850 the attention of the medical public was particularly called to "cedron," as an invaluable specific for the bites of venomous snakes. In the spring of 1852, Burtis Skidmore, Esq., of this city, placed in my possession, for examination, two of the kernels. This was my first acquaintance with "cedron," for at this time I had not seen Mr. Hooker's description and figure of the tree and cotyledons.* From the limited opportunity which these seeds furnished me of observing their effects in an obstinate case of intermittent fever, I became strongly desirous of testing its virtue on an extensive scale in this disease. Such an opportunity I failed in obtaining until September, 1853, when I received from Dr. J. A. Magrath, of Kingston, Jamaica, a package, containing about a pound of the cotyledons.

* *London Jour. of Botany*, 1850, and *Pharmaceutical Jour. and Transactions*, vol. x. p. 344.

During the autumn of 1853, cases of intermittent fever were not of unfrequent occurrence in this city, especially in the vicinity of Canal and Hudson streets, and, in fact, in the neighborhood of most of the "*main sewers*" in different sections of the city. It is not our intention to stop here and offer an explanation of the causes which are, and must be, from necessity, continually at work in producing intermittent fever in this city. This would require a searching investigation into our whole system of drainage and supply, and would in no way answer the objects for which this paper is written. As before stated, cases of fever were not of unfrequent occurrence, and during the months of September, October, and November, nine cases were treated with the article under consideration. Of this number, six were recent, and three were of long standing, having ~~successfully~~ resisted quinine, Fowler's solution, and all the usual means resorted to in the treatment of the disease. Of the six recent cases, five yielded readily and permanently to the remedy, in doses and at periods that will be particularized in the following cases; while the remaining one resisted, successively, emetics, cedron, quinine, Fowler's solution, etc., and finally yielded permanently to bebeerine and nux vomica combined. Of the three cases of long standing, and previously treated by different remedies, unsuccessfully, two yielded permanently to cedron, and one yielded temporarily, returning under the use of the remedy, but finally yielded permanently to cedron, after the administration of an emetic, followed by ten grains of pil. hydra. in divided doses.

Case 1.—Mrs. E., aged 38 years, of nervous sanguine temperament, rather feeble health, the mother of five children, resided in Newark, N. J., during the summer of 1852, and there contracted intermittent fever, from which she slowly recovered under the use of quinine, having experienced three relapses in the course of the season. In the month of September, 1853, having resided in this city nearly a year, she was again attacked with the quotidian form of the disease, and consulted me in the intermission between the third and

fourth paroxysm. She was ordered, as there was considerable gastric derangement, fifteen grains pil. rhei. comp., to be taken immediately; and after the next paroxysm of fever, to take ten grains of the cedron in powder every two hours. At the period of the next (the fifth) paroxysm, she complained of slight headache, but experienced no chill. From this time she was ordered ten grains of cedron, in powder, three times daily, for ten days. She had no return of the disease, and enjoyed, after, her usual health.

Case 2.—Mr. B., book-keeper in a bank, aged 27, of spare habit, contracted intermittent fever on Staten Island, in the fall of 1852, which yielded to quinine. Late in the summer of 1853 he was again the subject of the disease, and consulted me some four weeks after the occurrence of the first paroxysm. Relying upon his own judgment, he had already taken quinine, in the same doses as the fall previous, with the effect of temporarily arresting the disease. Its return, after an interval of nine days, led him to resume the use of the quinine in increased doses, until singing of the ears convinced him of the propriety of consulting a physician. At the time of his first visit, finding that there existed much tenderness or pressure over the epigastrium, slight yellowness of the conjunctiva, and tongue coated with brown fur in the centre, with red tip and edges, he was ordered thirty grains of ipecac. in powder, with ten grains of calomel. This portion operated freely as an emeto-cathartic, and after the succeeding paroxysm of ague, he was ordered ten grains of cedron, reduced to powder by grating the seed on a nutmeg grater, every three hours. The paroxysm of ague, which was expected, at its usual period, was delayed some two hours, and was somewhat less in severity and shorter in duration than that which succeeded the action of the emetic. As there existed some pain in the bowels, which was supposed to arise from the action of the cedron, he was ordered the same amount as before, every four hours, combined with fifteen drops tinct. opii. ~~comp.~~ Camp. These directions were steadily adhered to for four days, when the paroxysms of ague hav-

ing ceased, he was directed to omit the paregoric, and use the same amount of cedron three times a day. These orders were followed for some two weeks, when the further use of the medicine was suspended. Mr. B. has had no return of the disease. At no time did he complain of singing in the ears, or any other unpleasant sensations, except the slight griping pain in the bowels, which could be attributed to the action of the cedron.

Case 3.—M. S., aged 29 years, by profession an accountant, of spare habits, and strong nervous temperament, in the summer of 1852, contracted intermittent fever, of the quotidian variety, at Morrisania, where he was then residing. His attending physician put him upon the use of quinine, which, in the course of five days, arrested the paroxysms of ague. Remaining, however, exposed to the same causes, the disease returned in the course of the third week, when he was again put upon its use, with the effect of arresting the disease, although more tardily than on the previous occasion. From this time he remained free from the disease, until January, 1853, when, from domestic causes, his usual health having become considerably impaired, he was attacked with the disease, with much greater severity than on either of the previous occasions. Tonics, combined with quinine, were ordered him by his medical attendant. These were perseveringly used, for a period of four weeks, with but slight beneficial effects, and, meantime, his general health had become still more impaired by the disease. Seeing that something more was required to arrest the paroxysms, he was, very properly, ordered an ipecac. emetic, which was followed by blue pill, in five grain doses, three times daily, until two paroxysms (the fourth day) had passed by, when he was ordered Fowler's solution, accompanied with a liberal diet, and, during the well day, a moderate use of London porter. Under this treatment, there occurred soon a decided improvement in Mr. S.'s case, and, although at the end of two weeks, he had no distinct ague-chill, yet there remained a periodical headache, accompanied with fever, and neuralgic

pains in the facial and inferior maxillary nerves. These, under the use of carbonate of iron and vegetable tonics, almost entirely disappeared, and from this time until the succeeding October, with the exception of an occasional chill, or ague paroxysm, he continued to attend to his usual business.

In the latter part of September, 1853, Mr. S. spent about a week on Staten Island, and, immediately on his return to this city, was seized with the tertian form of intermittent fever, for the cure of which, in the course of four weeks, he took an ipecac. emetic, quinine, Fowler's solution, nux vomica, and pil. hydrar., followed again by quinine, with but slight, or temporary benefit. His general health having now become considerably reduced, he was almost ready to despair of a cure being effected in his case.

On the 2d of November, I was first consulted in regard to the treatment of the case, and, as he had but two days previous taken an emetico-cathartic, and there was but little chylopoietic derangement, he was immediately put upon the use of cedron in powder, and in twenty grain doses, every four hours in the froth of porter, with directions to suspend the remedy only during the hot stages of the disease. For four days he steadily persevered in the use of cedron, and at the end of this period, as there was a marked improvement —the paroxysms of fever having nearly ceased, and as there was present slight diarrhœa, accompanied with griping pains in the bowels—the cedron was diminished to ten grain doses, each dose of which was combined with fifteen drops of tinct. opii camph. This treatment was continued for three days, when all evidence of paroxysmal symptoms had disappeared. Mr. S. was now ordered ten grains of cedron every morning, with a view to its tonic effect, for I had become satisfied that it possessed decided tonic properties, especially in those states of the system which call for the use of columba, gentian, and other vegetable tonics. Under this treatment, he gradually and permanently convalesced, and has since had no return of the disease.

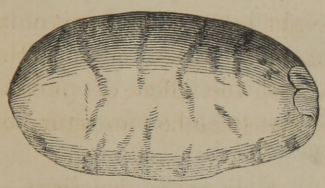
Case 4.—A. N., aged 19 years, of marked bilious temper-

ament, and robust constitution, on the 26th of July, 1853, sickened with what he supposed was a bilious attack, which, under domestic treatment, continued three days, when he was seized with a severe fit of ague, about 11 o'clock, A.M., which was followed with much febrile excitement, intense pain in the head, etc., which, in its turn, was succeeded by profuse sweating. With this paroxysm, all sickness passed off, and the next day he considered himself in usual health. On the second day from the first ague fit, at M. he sickened again, with a paroxysm, the same as two days previous, when, for the first time, he consulted me. Believing his attack to be intermittent fever, he was ordered to take of cedron in powder, as much as could be held upon a Spanish shilling piece, every four hours, for forty-eight hours, omitting it only during the succeeding paroxysm, if it should occur. He took as directed, in all, ten doses, with the effect of permanently arresting the disease. He has since had no return of intermittent fever.

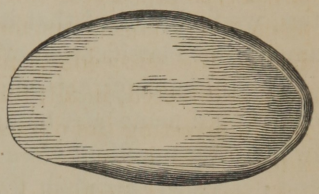
CASE 5.—A little girl, aged about six years, daughter of Mr. H., of 29th street, was observed to complain, every other forenoon, of being chilly, which condition was followed by headache and fever. She was subjected to domestic treatment for a week or more, when the paroxysms of ague became well marked, and the fever was accompanied by delirium. When first seen by me, the centre of her tongue was coated with a brownish-yellow, the tip being red; she complained of lassitude, and considerable pain in the epigastric region. She was ordered ten grains of pulv. rhei, with three grains of calomel, which produced three evacuations of the bowels. She was then directed to take a teaspoonful of the following mixture every four hours: pulv. cedron, thirty grains; simple syrup, two ounces; paregoric, one drachm. These directions were carried out for thirty-six hours, and as the next paroxysm did not recur, she was ordered a teaspoonful morning and evening. Her recovery was complete, and although apparently exposed to the same causes, she has since had no return of the disease.

Remarks.—In addition to the foregoing cases, reported, and alluded to as treated in the fall of 1853, I have treated six cases during the past summer, (1854) exclusively with cedron, with the following results: Four with cure, prompt and permanent, one passed from my observation before the result was known, and the remaining one is still under observation, having resisted emetics, quinine, and beberine, previous to consulting me.

From these results and those obtained in neuralgic cases, which we think unnessary to detail, there can hardly arise a doubt but that the cotyledons of the Simaba cedron, one of which is here represented, possess decided anti-periodic prop-



Convex surface of a Cotyledon of Cedron.



Flat surface of a Cotyledon of Cedron.

erties. And in this belief we do not stand alone. Dr. Cespèdes, of Bogota; M. Herran, of France; Dr. P. Smith, of San Francisco, Cal.; and Dr. Magrath, of Jamaica, W. I.; have each testified, as will be seen hereafter, to its decided medicinal virtues in this respect.

Dr. Magrath, of Kingston, Jamaica, has used it extensively not only in the treatment of intermittent fever, but also in yellow fever. In this latter disease, he writes me, that it appears as useless as quinine, or any other remedy to ~~assist~~ the progress of the disease, in most of the cases in hospital, although it was thought that the skin of those who were taking it, was less dark or congested, than those who did not take it. His mode of giving it in intermittent fever, was in powder, or in pills, in ten grain doses every three hours, for twenty-four or thirty-six hours, and with the effect of successfully arresting the disease; he always gave it during the

intermission, and it almost always prevented a second paroxysm if it failed in the first.

Thus it will be seen that the evidence which has already accumulated in regard to this plant, points to the fact that it possesses important anti-periodic properties. And perhaps upon further investigation, it may be found to be a valuable substitute for quinine—a desideratum long sought after. Our own observations have been confined to the cotyledons in powder in intermittent, and in tincture in neuralgia, dyspepsia, and chronic derangements of the stomach, involving impaired digestion. In these conditions we are satisfied that it possesses curative properties equal to columba, quassia, or any of the vegetable tonics, and in view of these properties, we feel assured that it is worthy of an exalted position among this classification of the vegetable Materia Medica.

To M. Planchon, according to Hooker, belongs the merit of giving a name and botanical station to the cedron plant. In his truly excellent *Revue de la Famille des Simaroubées** he first described this plant from Mr. Purdie's specimens in Mr. Hooker's Herbarium. For the following description and figure, we are indebted to the *London Journal of Botany*, as before cited.

Simaba *cedron*, *Planch.*; trunco erecto ramis subumbellato-capitatis, foliis longissimis pinnatis glabris sub-20-jugis cum impari, foliolis subcoriaceis eliptico-lanceolatis acuminulatis basi obliquis, racemis elongatis compositis ramis rufescenti-subvelutinis, drupis magnis ovalibus solitariis. —S. Cedron, *Planchon in Hooker's Lond. Jour. Bot.* vol. vi. p. 566.

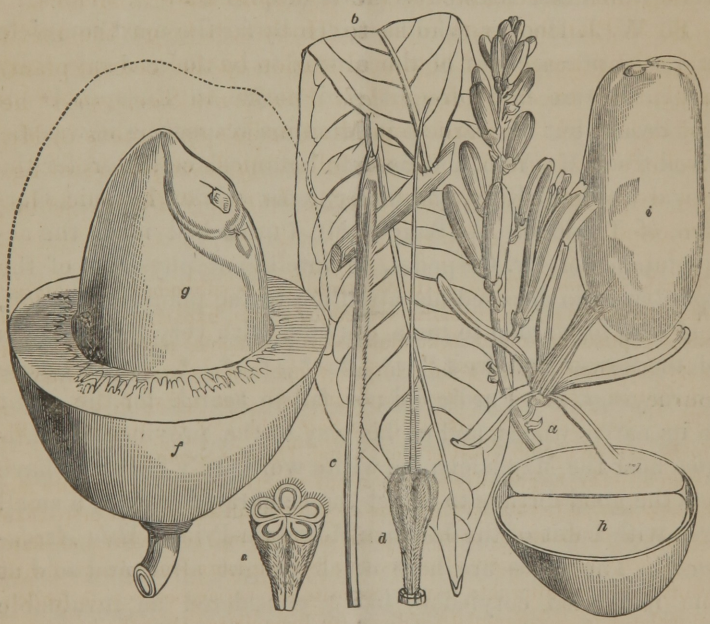
Hab.—New Grenada. Banks (near San Pablo) of the Magdalena, *W. Purdie*, Isle de Caybo, coast of the Pacific, *Thomas Seemann.*

Descr.—The height of the *tree* is not exactly stated, but it does not probably exceed twenty feet, with an erect undivided *trunk* not more than six inches in diameter, crowned with a dense and somewhat umbellate head of *branches*. *Leaves* glabrous, two feet and more long, pinnated with twenty or more alternate, rarely opposite sub-coriaceous, sessile *leaflets* 4–6 inches long, accuminulate, oblique (or inæquilateral) at the base, penninerved; the *rachis* is terete, terminated by an odd leaflet. *Racemes* two feet or more in length, strict, branched, the main *rachis* and *branches*

* *London Journal of Botany.* Vol. v. p. 566.

clothed with minute ferruginous, velvety down, chiefly towards the apices; *branches* short, solitary or clustered; *pedicels* bracteolated. *Calyx* minute, cup-shaped, obscurely 5-toothed feruginous-downy. *Corolla* of five, linear, obtuse or retuse, spreading *petals*, pale brown and downy externally. *Stamens* ten, short, arising from the back of as many staminiferous *scales*, which are erect, and approximate in a tube. *Anthers* oblong, introrse. *Ovaries* five, seated upon a columnar *gynophore*, downy. *Styles* five, united into one, above the base, and exceeding the stamens in length. *Ovules*, one in each ovary. *Fruit*, very large, solitary (by abortion) *drupe* of an oval form, oblique at the top, and having a scar below the summit, indicating the former site of the style. The soft portion of the fruit seems, in the preserved state, not to have been very soft and fleshy, it is lined with a horny *endocarp*. *Seed* large, solitary, suspended, its integument membranaceous, with a conspicuous *chalaza*. *Albumen*, none. *Embryo*, conform with the sides. *Cotyledons* very large, fleshy, white when fresh.

Simaba Cedron.




*a*, branch of a raceme; *b*, a leaf; *c*, scale, bearing a stamen; *d*, ovaries, with the gynophore; *e*, transverse section through the five ovaries, *magnified*; *f*, fruit cut round transversely, so as to exhibit the transverse seed; *g*, the dotted line shows the outline of the entire fruit; *h*, transverse section of the seed; *i*, a cotyledon, in the state which it is exported:—*nat. size.*

In regard to the history of its introduction into practice, we have nothing certain. M. Herran,* Chargé d'Affaires de la République de Costa Rica, in France, says that "it was only in 1828, that the native Indians brought to the market of Carthagena, some seeds of *cédron*. To prove their infallible virtue, they submitted animals and themselves to be bitten by the most dangerous serpents, called *Toboba Corlia de la Montagne*, etc., and the promptitude with which the poison was neutralized, was so marvelous that a single seed sold for a doubloon, (eighty-three francs)." * * * * * * * * "During my long sojourn in Central America, I had recourse to the seeds of cedron, successfully, in eight different cases." * * * * * * * * * * * * * "I have also successfully employed this medicine in intermittent fevers, which had resisted sulphate of quinine."

Sir W. J. Hooker, who has given by far the most complete and scientific account of the cedron to be found,† says "By whom it was first brought into notice in Europe, I am not aware, but my earliest information respecting it was derived from Mr. Wm. Purdie, late botanical collector for the Royal Gardens, Kew, and now curator of the Botanic Garden, of Trinidad. At Bagota, Mr. Purdie had made the acquaintance of Dr. Cespèdes, an intelligent physician of the country, who directed his attention to the plant in question, and who forwarded to me a drawing with very fair analysis of the flower and fruit." * * * * * * In his future journeyings, Mr. Purdie did not fail to search for the plant in its native woods, and on his way to the province of Antigua, near the Magdalena, he wrote word, July 1846: 'I have had the good fortune to detect the celebrated *cedron*, a small tree with habit of the Jamaica Mountain-Pride, (*Mela Azedarach*). The seeds are here much sought after, and sold at one real each cotyledon, being considered an invaluable

---

* *Comptes Rendus.* Vol. xxxi. p. 141 2.

† Vide *Description and figure of the Cedron of the Magdalena River*, (*Simaba cedron*, Planchon). By Sir W. J. Hooker, D.C.L., F.R.S.—*London Jour. of Botany*, 1850.

specific for the bites of snakes, for intermittents and stomach complaints generally. The bark and wood also abound in a high degree with the bitter principle.' The dried specimens sent by Mr. Purdie were further accompanied with the following note: 'The *cedron* has an erect stem not more than six inches in diameter, crowned by an umbelate mass of branches, with large handsome pinated foliage; so highly are the seeds prized here for their powerful medicinal virtues, that they cannot be purchased for less than two reals, or one shilling each. I have had the testimony of medical men in Bagota in favor of their properties, and Dr. Cheyne has frequently tried them with success. Dr. Cespèdes, some years ago, was sent expressly on a mission from Bagota to the locality of this plant, which is in woods immediately behind the village of San Pablo, on the banks of the Rio Grand de Magdalena.' The cedron is, however, probably more extensively distributed than Dr. Cespèdes and Mr. Purdie imagine, especially to the westward towards the Pacific, in New Grenada. Another collector of Kew Gardens, then and still on board of H. M. surveying ship "Herald," (Capt. Kellett, commander), transmitted specimens to Kew the following year, 1847, from the Isle de Caybo."

Mr. Berthold Seeman, the historian of the voyage of the "Herald," whilst engaged in the exploration of the canton of Alange, and on his road to the village of Remedios on the 29th of January, 1849, "found the Cedron, a tree," he says, "which has gained great celebrity and is well deserving of particular notice. The most ancient record of it which I can find, is in the 'History of the Buccaniers,' an old work published in London in the year 1699. Its use as an antidote for snakes, and its place of growth are there distinctly stated; but whether on the authority of the natives or accidentally discovered by the pirates, does not appear. If the former was the case, they must have learned it while on some of their cruises on the Magdalena, for in the Isthmus, the very existence of the tree was unsuspected, until about 1845, when Don Juan de Ansoatequi ascertained that

the *cedron* of Panama and Darien was identical with that of Chartagena. * * * * In the Isthmus it is generally found on the out-skirts of forests in almost every part of the country; but in greater abundance in Darien and Vraguas, than in Panama. The natives hold it in great esteem, and always carry a piece of the seed about with them. When any one is bitten, a little mixed with water, is applied to the wound, and about two grains, scraped in brandy, or in the absence of that, into water, is administered internally. By pursuing this treatment, the bites of venomous snakes, scorpions, centipedes, and other noxious animals, have been unattended by dangerous consequences. Doses of it have proved beneficial in cases of intermittent fever. * * * * * * Each seed, or cotyledon, I should rather say, is sold in the chemist shops of Panama for two or three reals (about 1s. or 1s. 6d, English), and sometimes a much higher price is given for them."*

Dr. Peter Smith, of the City Hospital, of San Francisco, received a letter dated Nov. 22d, 1849, from Don José Abaldia, Govenor of Panama,† in which it is stated that, "the tree which produces the fruit, and is called the '*cedron*,' is described in the scientific work of Dr. Cespèdes, one of their own naturalists. * * * * The tree grows abundantly in humid places, and as the wood is inapplicable to the uses of life, and the fruit neglected by animals on account of its bitterness, an abundant supply is predicted."

I might here state that the first specimens I saw, those presented me by Mr. Skidmore, were obtained at Panama.

Dr. Horner, of the U. S. N., states‡ "that Dr. Smith, of San Francisco, used for the cure of chronic dysentery and intermittent fever, the kernels of the cedron, a fruit obtained at Panama. * * * * He gave them scraped in the dose of ten or more grains, and thought them equally as efficacious as quinine. The cedron has great celebrity among the people of the Isthmus, for the cure of snake bites, and he states

---

* Vide *Narrative of the Voyage of H. M. S. Herald, etc., during the years* 1845–51. By Berthold Seeman, F.L.S. Vol. ii. p. 74, 75. London: 1853.

† *Philadelphia Medical Examiner.* Vol. vii. N. S. p. 140. ‡ *Ibid*, p. 91.

that they carry it about their persons to have it in readiness for immediate use when needed. Dr. Smith gave me a number of kernels, and one entire pod, which I brought home for distribution. While crossing the Isthmus, I would have been much pleased to find the tree which yields this valuable medicine, but I was unable to obtain any accurate description of it, or of the places where it grows."

Dr. Pereira, in the last edition of his great work, on *Materia Medica*, makes no mention of this plant. On the 2d of Nov., 1850, however, he wrote Sir J. W. Hooker, regarding it in the following words,* "I am not acquainted with any observations made in England, or even in Europe, respecting the *Simaba cedron.* * * * * The specimen of the seeds and fruit, which I possess, were brought a few months ago from Panama, by a gentleman (not a medical man). They were given him by W. Barrington, Esq., an English surgeon at Panama. The statement accompanying them was to the effect that the seeds were much used, and with great confidence by the native doctors of the Panama country, both locally and internally, as the grand antidote against snake poison.

"To the taste these seeds are intensely bitter, and doubtless like the bitter barks and woods of other Simarubaceous plants (*e. gr. Quassia* and *Simaruba*) they possess the properties of other bitter tonics, and might be useful in dyspepsia, and perhaps ague."

From all that we can learn regarding its habitude and mode of procurement, we are led to believe that the only obstacle in the way of the use of cedron in medicine, is its apparently somewhat limited supply. We say apparent, for in a letter received from Dr. Magrath, we learn that "the cedron appears to be obtainable in quantity, with some little difficulty, from Carthagena; but a brisk demand, no doubt, would cause an equal supply." The history of all new medicinal agents, derived from savage or semi-civilized countries, teaches us the fact, that at first, the remedy sought

---

* *London Jour. of Botany, opit. cit.*

after is obtained with much difficulty; but we should not, from this cause alone, neglect to investigate or enquire into its uses; and should it, according to our belief, be found that this article possesses decided merit, and some advantages over quinine, we have no doubt but that some of our enterprising commercial druggists will find it to their interest to devise means for its introduction into our market.

Finally:—From the declared experience of various observers of the medicinal effects of the Simaba cedron, we are warranted in drawing the following conclusions regarding its therapeutic action:—

That it possesses decided anti-periodic properties, and is therefore applicable in the treatment of periodic diseases.

That it is less likely than quinine to produce the aggregate of encephalic or neuropathic phenomena, induced by overdoses.

That it may, in large doses, repeated often, produce griping of the bowels, and even diarrhœa; but that these conditions are easily controlled by appropriate medicaments.

That, as a remedy in intermittent fever, it possesses properties, in many respects, equal to quinine, and in most cases is equally adapted to the curation of this disease.

That, in the treatment of yellow fever, it does not appear to possess any particular advantages over quinine, but nevertheless is equally well adapted to fulfill the indications which call for the use of this latter remedy.

That it possesses marked tonic properties, and deserves a prominent place in this classification of the Materia Medica.

That in chronic dysentery, diarrhœa, dyspepsia, and all states of the stomach, accompanied with impaired or difficult digestion, its use will be found to be attended with benefit.

That, should a demand arise for its use in medicine, it is believed that it will be found not difficult to obtain a supply, in quantities sufficient to afford it at a much less price than quinine.

New York, *September 1st*, 1854.