To extract the medicinal properties of this root a high temperature is required, and may be safely used, beginning by cold infusion.

One pound troy yielded extract 6oz.

To which was added by boiling
in Papin's digester 4

—
oz. 10

In the extract the predominance of free acid is highly remarkable, nearly 2 oz. of alkali being required to neutralise the free acid from one pound of jalap.

CONIUM

Contains :—

Free muriatic acid,
Resinous matter, combining a *highly volatile and very subtle principle*,
Essential oil,
Gum in great abundance,
Colouring matter,
Muriate of potash,
Sulphate of potash.

The active medicinal properties of this plant appear to reside chiefly in the subtle principle above-mentioned.

In the "Medical Gazette" for July, 1831, I stated, that in the ordinary manner of preparing the extract of conium from the expressed juice of the plant, this principle volatilises and escapes at the temperature of 120°; but I am now of opinion that that is an extreme limit, and that volatilisation commences at a still lower temperature. The great care and caution necessary, therefore, in the preparation of the medicine must be obvious, and the admitted uncertainty of its effect under the hand of the physician is explained by the simple fact that a temperature much exceeding 120° is ordinarily employed in its preparation, and hence it too often proves to be powerless.

To secure the resinous matter without decomposing or disturbing the volatile principle, I have adopted the method of heating the juice to a temperature just sufficient to produce the separation of this matter (commencing at about 100°), which, being thus separated, is removed, from time to time, as the separation proceeds. The liquor remaining, and in which muriatic acid is abundant, is evaporated to the consistence of thick syrup, the resinous matter is then admixed therewith, and thus the extract is formed, after which it may be interesting to remark, that several weeks are required to effect the desired reunion of the resinous matter in the manner essential to the efficacy of the medicine, and which reunion I believe to be effected chiefly by the agency of the muriatic acid; however this may be, extract of conium, thus prepared, is a medicine not only of considerable power, but equally to be relied upon with any other medicine duly prepared. It is a medicine of great power, and is uniform in its operation.

OPIUM.

This secretion from the poppy-head requires more attention than it is in my power at present to devote to the analytic explanation which its great importance and the complexity of its details require; but I cannot close this paper without observing, that in separating the two antagonist principles which it contains, the stimulant and the sedative, I have, I believe, secured all the principles of the sedative power, in combination with the peculiar acid of the secretion, by which they are held in solution free from any admixture of the stimulant principles.

REMARKS.

Bark yields all its medicinal properties to cold water, a moderate elevation of temperature only being used in its condensation.

Senna and rhubarb yield their medicinal properties without the aid of heat.

Jalap, on the contrary, requires a very high temperature for the complete extraction of its medicinal virtues.

Conium.—The separations required for the purpose of my preparation of this medicine are effected at a low degree of heat, and I have stated, as the fact is, that the medicine, as thus prepared, is of great and uniform power, but it will, notwithstanding, be the object of my endeavour still further to improve this medicine.

The properties of the above-mentioned and other vegetable acids will, in particular, be the object of my future attention, and I shall hope to be permitted to submit the results of those and other investigations to the consideration of the members of the Royal College.

I have the honour to be, Gentlemen, your obedient servant,

(Signed) RICHARD BATTLE.

PHYSIOLOGY OF VOMITING.

To the Editor of THE LANCET.

SIR :—In reading in THE LANCET of the 21st of April last the very interesting lecture on the nervous system, by Dr. M. Hall, I find that he has given a new theory of the act of vomiting. His experiments and reasoning appear quite conclusive, that vomiting is an effort of *expiration*, the more so, as anatomy and physiology are on his side; but in the application of these two sciences, he did not, I think, lay sufficient stress on one fact when he says,—“To effect this *open* state of the cardiac orifice, it is *probably* necessary that the diaphragm should, indeed, be in a relaxed rather than a contracted state.” (§ 1118.)

Now, it is undeniably true, that the diaphragm *is* and *must be* relaxed, for of all the openings in this muscle, the oesophagean is the only one that is almost completely mus-

cular, and the *only* one that is *constricted* during the contraction of the diaphragm; and the more complete is this contracted state (as it would be in *inspiration*) the closer is the cardiac opening shut; *vice versa*, the more flaccid this muscle is (*expiration*), the larger we find the cardiac orifice.

Were it not for this, in any violent exertion or effort of ordinary life, to accomplish which the lungs are distended, the diaphragm depressed by its own action, the abdominal muscles strongly contracted, and the stomach *violently compressed*, vomiting would be of very frequent occurrence; but it is not by the very wise provision that nature has made.

That Dr. Hall knew this fact I do not doubt, but he did not mention in his lecture (according to your report) the anatomical structure of the part, as an additional proof of his assertion; for I think that where anatomy coincides with any theory or explanation, it gives it infinitely more weight, I remain your humble servant,

C. DAVIES, M.D.P.

London, 3rd May, 1838.

MORTALITY OF HORSES.

THE following extract is taken from the "Edinburgh Medical and Surgical Journ.," No. 335. Mr. Marshall deserves great credit for having directed attention to a subject of so much interest to the public service, and so important in comparative pathology:—

The object of this paper is to submit some statistical facts in regard to — Regiment of Heavy Dragoons, for a period of eight years, and, in so far as one corps may serve as a type or symbol of the cavalry in general, the results cannot but be interesting.

TABLE I.—The following table is intended to show the ages of the horses belonging to the regiment in question, according to the register in 1836 and 1837:—

1836.			1837.		
Age.	No.	Years.	Age.	No.	Years.
3 years	+ 8	= 24	3 years	+ 13	= 39
4 d°	40	160	4 d°	23	92
5 d°	6	30	5 d°	22	110
6 d°	13	78	6 d°	33	198
7 d°	9	63	7 d°	16	112
8 d°	17	136	8 d°	10	80
9 d°	24	216	9 d°	4	36
10 d°	13	130	10 d°	17	170
11 d°	20	220	11 d°	20	220
12 d°	15	180	12 d°	12	144
13 d°	14	182	13 d°	13	169
14 d°	30	420	14 d°	10	140
15 d°	15	225	15 d°	11	165
16 & above	9	144	16 & above	38	608
233) 2208			242) 2263		
Average age....9½			Average age....9½		

From the above table, it appears that the mean age of the horses is about 9½ years.

TABLE II.—This table will show the amount and the ratio of mortality among the horses, together with the number and ratio of horses cast* (discharged) in consequence of disabilities.

Years.	Strength.	Died.	Ratio of Deaths per Cent. of the Mean Strength.	Cast.	Ratio of Horses Cast per Cent. on Account of Disabilities.	Reduction of Horses by Death and Disabilities per Cent.
1830	245	6	2.4 or 1 in 41	16	6.5 or 1 in 15	8.9
1831	256	12	4.6 or 1 in 21	15	5.8 or 1 in 17	10.5
1832	268	10	3.7 or 1 in 27	13	4.8 or 1 in 20	8.5
1833	267	6	2.2 or 1 in 44	20	7.4 or 1 in 13	9.7
1834	250	2	.8 or 1 in 125	20	8.0 or 1 in 12	8.8
1835	248	4	1.6 or 1 in 62	35	14.1 or 1 in 7	15.7
1836	238	10	4.2 or 1 in 24	23	9.6 or 1 in 10	13.9
1837	244	8	3.2 or 1 in 30	26	10.6 or 1 in 9	13.9
Total..	2016	58		168		
Mean of eight years..	252	7 and 2-8ths	2.8 or 1 in 35	21	8.3 or 1 in 12	11.2 or 1 in 9

This table shows that the average annual strength of the regiment was 252, the average deaths 7.2-8ths, the centesimal ratio of deaths 2.8, the mean annual number of horses cast 21, the centesimal ratio of cast horses 8.3, and the mean annual reduction of the regiment by death and casting 11.2 per cent. The annual ratio of deaths was 1 in 35, and the ratio of horses cast 1 in 12, the loss by both deaths and casting being 1 in 9.

* To "cast" and to "cashier" may be derived from the barbarous Latin word "cassare," and the French "casser," to discard, break, disqualify.