

*On the Relative Efficacy of Tincture of Hyoscyamus, Bromide of Potassium, and Chloral, in Single Doses, on Maniacal Excitement.* By JOHN A. CAMPBELL, M.D., Assistant Medical Superintendent, Garlands Asylum, Carlisle.

(Read at a Meeting of the Members of the Medico-Psychological Association, held in the Royal College of Physicians, Edinburgh, on November 30th, 1871.)

Most asylum physicians admit that in acutely excited cases in whom the ordinary means of inducing sleep, viz., out-door exercise and liberal diet, fail, sleep should be induced by some medical agent, in case the continued excitement may prove too much for the patient, and that in cases of mild melancholia and nervous irritability, where insomnia has been and is the most prominent symptom, that some sleep-causing medicine should be given. As to the medicine, the preparations of opium and the tincture of hyoscyamus long reigned supreme, for some time bromide of potassium was much extolled for its sedative and soporific properties, and latterly chloral has totally eclipsed every other sedative or hypnotic.

Being in the practice of giving some of the excitedly noisy, the restless, and other cases labouring under insomnia, as well as the recent acutely excited cases, some sleep-causing medicine nightly, and having frequently given tincture of hyoscyamus, bromide of potassium, or chloral, I thought that if I gave these three medicines for some time, in the same doses to the same patients, I might form a tolerably accurate idea of their relative efficacy in the following respects:—

- 1st—Which was the surest sedative to excitement?
- 2nd—Which was the most certain sleep-producer?
- 3rd—Which acted most quickly?
- 4th—What is about the equivalent dose of each?

Of course, having frequently given each of these medicines, I had formed a general opinion of their relative efficacy in all these respects, as most medical men do of medicines that they give frequently.

The method I adopted to arrive at the results I wished for was this. I gave, first, to all the excited, and second, to all the simply sleepless patients, whom I could get to take medicine, on consecutive nights, Tr. hyoscymi, ℥ii; potass. bromid., gr. lx.; and chloral, gr. xxx., frequently repeating those experiments. I considered that by giving the medicines on alternate nights, if the patient's state changed it would do so for all the medicines, and if any of the medicines had a cumulative tendency it would not show itself. I supplied the night attendant with forms, which he filled in, showing the interval

between taking the medicine and the appearance of any effects, whether sleep resulted, and how long the effects lasted in each case on every occasion.

The following are the cases in which I gave the medicines, and the results I arrived at:—

R. B., a case of mania, very excited, restless, and noisy during most part of the night.

J. B., a case of periodic mania, very much excited.

J. G., a case of chronic mania, much excited.

M. S., a case of periodic mania, much excited.

S. T., a similar case to the last.

A. W., a case of mania, restless and noisy at night.

J. G., chronic mania, restless, constantly talking to himself the most part of each night.

M. B., a case of mania, slightly excited and noisy at night.

M. T., a case of mania, slightly excited and noisy at night.

J. McL., a similar case to the last.

W. J., an advanced case of general paralysis, slightly restless and noisy at night.

J. B., a similar case of general paralysis.

J. S., a case of melancholia, with extreme insomnia.

I. P., a case of melancholia, with slight insomnia.

In these 14 cases I gave each of the medicines 46 times. Table I. shows the sex, age, mental state, excitement, number of times the medicines were given, average time before effects were observed, and their average duration in each case.

The total results that I got (each of the medicines having been given 46 times) were, that tincture of hyoscyamus produced sleep on 42 occasions, bromide of potassium on 38, and chloral on 43 occasions.

The average time in which effects were observed with tincture of hyoscyamus was 1 hour and 7 minutes; with bromide of potassium, 1 hour and 15 minutes; and with chloral, 48 minutes.

The average time the effects lasted with tincture of hyoscyamus was 4 hours and 6 minutes, with the bromide 3 hours and 54 minutes, and with chloral 4 hours and 26 minutes.

Thirty grains of chloral produced effects more quickly, sleep more frequently, and its effects lasted longer, than two drachms of tincture of hyoscyamus; and this dose of tincture of hyoscyamus was more powerful in these respects than one drachm of bromide of potassium. Taking the 14 patients, I find that tincture of hyoscyamus always produced sleep in 11, did so only a certain number of times in 2, and not at all in 1. That bromide of potassium did so always in 8, occasionally in 3 and not at all in 3; that chloral produced sleep always in 12, occasionally in 1, and not at all in 1. (*See Table I.*)

TABLE I.

Sex.	Age.	Mental State.	Excitement.	TE. HYOSCYAM 3ii.			POTASS. BROMID. gr. i.x.			CHLORAL Gr. xxx.		
				No. of times given.	No. of times pro-duced Sleep.	Average time before effects observed.	No. of times pro-duced Sleep.	Average time before effects observed.	No. of times pro-duced Sleep.	Average time before effects observed.	No. of times pro-duced Sleep.	Average time before effects observed.
R. B. . . . .	M. 46	Mania.	Very Excited.	2	0	hr. m. 0 0	0	0	hr. m. 0 0	0	0	hr. m. 0 0
J. B. . . . .	M. 70	Mania.	Very Excited.	2	1	hr. m. 2 1	0	30	hr. m. 0 1	2	1	hr. m. 4 4
J. G. . . . .	M. 54	Mania.	Very Excited.	3	3	hr. m. 1 30	3	25	hr. m. 2 3	3	3	hr. m. 5 20
M. S. . . . .	F. 45	Mania.	Very Excited.	4	4	hr. m. 1 7	4	45	hr. m. 2 40	4	4	hr. m. 2 30
S. T. . . . .	F. 60	Mania.	Very Excited.	4	4	hr. m. 2 15	4	40	hr. m. 2 40	4	4	hr. m. 2 7
A. W. . . . .	F. 20	Mania.	Very Excited.	4	4	hr. m. 1 10	4	52	hr. m. 5 30	4	4	hr. m. 5 17
J. G. . . . .	M. 30	Mania.	Slightly Excited.	4	4	hr. m. 5 2	4	45	hr. m. 5 5	4	4	hr. m. 4 15
M. B. . . . .	F. 30	Mania.	Slightly Excited.	3	3	hr. m. 20 5	2	16	hr. m. 5 4	3	3	hr. m. 5 30
M. T. . . . .	F. 37	Mania.	Slightly Excited.	2	2	hr. m. 30 4	2	25	hr. m. 5 4	2	2	hr. m. 4 30
J. McL. . . . .	F. 36	Mania.	Slightly Excited.	3	3	hr. m. 33 5	3	30	hr. m. 6 6	3	3	hr. m. 5 6
W. J. . . . .	M. 31	General Paralysis.	Slightly Excited.	6	6	hr. m. 45 4	5	54	hr. m. 3 80	6	6	hr. m. 4 40
J. B. . . . .	M. 42	General Paralysis.	Slightly Excited.	2	2	hr. m. 80 3	0	0	hr. m. 0 0	0	0	hr. m. 3 36
J. S. . . . .	M. 48	Melancholia.	Great Insomnia.	5	4	hr. m. 2 30	4	1	hr. m. 1 30	4	4	hr. m. 5 5
I. P. . . . .	F. 41	Melancholia.	Slight Insomnia.	2	2	hr. m. 35 5	2	1	hr. m. 1 30	2	2	hr. m. 5 30
Total No. of times given and sleep produced, and average time before effects appeared, and their duration ...				46	42	hr. m. 1 7	38	1	hr. m. 15 3	48	4	hr. m. 4 26

I then increased the dose of each of the medicines by one half, that is, I gave of tincture of hyoscyamus *ziii*, of bromide of potassium *gr. xc.* and of chloral *gr. xlv.* I only gave this dose to the most excited of the patients, to whom I had given the smaller doses, and to two other cases—one a case of periodic mania, and the other a case of general paralysis, both much excited—in all to 6 cases of mania, 1 of general paralysis, and 1 of melancholia with extreme insomnia. In these 8 cases I gave each of the medicines on 31 occasions. Table II. shows the result in each case. (*See opposite page.*)

The total results that I arrived at (each of the medicines having been given on 31 occasions) are, that tincture of hyoscyamus produced sleep on 24 occasions, bromide of potassium on 18, and chloral on 28 occasions. The average time in which effects were observed with tincture of hyoscyamus was 35 minutes, with bromide of potassium 46 minutes, and chloral 29 minutes. The average time the effects lasted with tincture of hyoscyamus was 3 hours and 39 minutes, with the bromide 3 hours and 31 minutes, and with the chloral 4 hours and 27 minutes.

Chloral in this dose, as in the former, shows its superiority, having produced its effects more quickly, sleep more frequently, and its action continuing longer, than either of the other medicines. Tincture of hyoscyamus retains its place next to chloral. Bromide of potassium did not comparatively cause sleep so often in the larger dose given to the few very excited cases as it did in the smaller dose given to the larger number of less excited cases. I may mention here that in the case of J.S., a patient labouring under melancholia with extreme insomnia, it was more difficult to cause sleep than in patients labouring under a considerable amount of excitement. This patient was perfectly rational and very anxious to sleep soon and soundly, and he told me that he much preferred the tincture of hyoscyamus or chloral to the bromide of potassium. Taking the 8 patients, I find that tincture of hyoscyamus always produced sleep in 3, occasionally in 4, and not at all in 1; that bromide of potassium always produced sleep in 3, occasionally in 3, and not at all in 2. Chloral always produced sleep in 6, occasionally in 1, and not at all in 1.

I then increased the dose to double of that which I had begun with, that is I gave of tincture hyoscyamus 4 drachms, of bromide of potassium 2 drachms, and of chloral 1 drachm. I gave this dose to two cases only—to one of them on five

TABLE II.

	Sex.	Age.	Mental State.	Excitement.	No. of times given.	TR. HYOSCYAM. 3iii.			POTASS. BROMID. Gr. xg.			CHLORAL Gr. xlv.		
						No. of times produced Sleep.	Average time before effects observed.	Average time effects lasted.	No. of times produced Sleep.	Average time before effects observed.	Average time effects lasted.	No. of times produced Sleep.	Average time before effects observed.	Average time effects lasted.
R. B. . .	M.	46	Mania.	Very Excited.	2	0	hr. m.	0	hr. m.	0	hr. m.	0	hr. m.	0
W. W. . .	M.	60	Mania.	Very Excited.	8	8	1 3	6	1 15	2 40	8	40	3 40	
J. G. . .	M.	54	Mania.	Very Excited.	7	5	46	4 14	44	5 48	7	25	5 14	
H. F. . .	M.	54	General Paralysis.	Very Excited.	4	3	30	4 20	1 30	4 4	4	30	5 15	
J. B. . .	M.	70	Mania.	Very Excited.	3	2	17	3	33	4 4	2	32	4	
S. T. . .	F.	60	Mania.	Very Excited.	3	3	33	2	10	3 40	3	16	3 40	
M. S. . .	F.	45	Mania.	Very Excited.	2	2	30	3 30	35	1	2	20	3 15	
J. S. . .	M.	48	Melancholia.	Great Insomnia.	2	1	30	1	0	0	2	30	6 20	
Total No. of times given and sleep produced, and average time before effects appeared and lasted . . .					31	24	35	3 39	46	3 31	28	29	4 27	

occasions, to the other on one. Firstly, R. B., a case of mania, very excited at night, on whom the smaller doses had had no effect, got each of the medicines on five occasions. Tincture of hyoscyamus caused sleep three times; its effects were observed in an average time of an hour and a quarter, and lasted 7 hours. Bromide of potassium produced no observable effects on any occasion. Chloral caused sleep each time: its effects were observed in an average time of 30 minutes, and lasted 7 hours. Secondly, J.G., a case of mania in a state of very great excitement, got each of the medicines once. Tincture of hyoscyamus caused sleep; its effects were observed in an hour and lasted 7 hours. Bromide of potassium had no perceptible effect. Chloral caused sleep; its effects were noticed in 44 minutes and lasted 4 hours.

In this dose again chloral produced sleep more frequently and more quickly than tincture of hyoscyamus. The bromide proved utterly inefficacious, where so much excitement existed.

In only one case and only on one occasion have I seen a patient sick after the administration of any of these medicines; that was after a drachm of chloral in one ounce of water, and in all probability the sickness was caused by the medicine not being sufficiently diluted. I noticed no bad effects of any other kind follow their administration. I find that in these patients, all of whom were in fair condition, except the general paralytics, neither age nor sex seemed much to influence the effects of the medicines. It was simply the existing excitement or insomnia that had any such influence. In great excitement a large dose of tincture of hyoscyamus or of chloral may not act for a considerable time and yet ultimately act strongly.

The results of these experiments, which, from their limited number, must not be regarded conclusive, are—

1st.—That both chloral and tincture of hyoscyamus are sure sedatives to maniacal excitement.

2nd.—That of these two medicines chloral is the most certain sleep-producer.

3rd.—That chloral acts more quickly than tincture of hyoscyamus.

4th.—That though bromide of potassium in such doses is a sedative to maniacal excitement and to a certain extent an hypnotic, yet it is not a sufficiently powerful sedative to allay intense excitement, or an hypnotic to compel sleep where great insomnia exists.

5th.—That a two-drachm dose of tincture of hyoscyamus is not quite equivalent to thirty grains of chloral. Two-and-a-half drachms would probably be as nearly an equivalent as could be given. From the different sedative and soporific power of bromide of potassium, I think one can hardly form an idea of an equivalent dose. It appears to me to be useful only where the excitement or insomnia is of a slight character.

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*Mental Epidemics among the Lower Animals.* By W. LAUDER LINDSAY, M.D., F.R.S.E., Physician to the Murray Royal Institution (for the Insane), Perth.

In supplement of my paper on “The *Physiology*\* of Mind in the Lower Animals,” and in anticipation of the correlative essay, which I hope by-and-bye to contribute to the “Journal of Mental Science,” on “The *Pathology*† of Mind in the Lower Animals,” I am desirous—so long as the whole British public has a vivid memory of certain signal illustrations of the fact, or phenomena—to direct attention to the circumstance that the lower animals, in common with man, are subject to certain forms of *Epidemic Mental Derangement*. I allude more especially, at present, to that form thereof which is popularly known as *Panic*, and technically described as *Timoria* or *Pan-phobia*; an affection that is very properly included among “Epidemic Mental Diseases” in the short account given of them by Dr. Browne, ex-Commissioner in Lunacy for Scotland, in “Chambers’s Encyclopædia” (vol. iv, 1862, p. 92).‡ The illustrations to which I would specially draw attention, in the case of the lower animals, are to be found, on the one hand, in the notorious *Stampedes*§ of Cavalry Horses, which character-

\* “Journal of Mental Science,” April, 1871.

† The whole subject of both “The *Physiology and Pathology* of Mind in the Lower Animals,” has been *outlined* by the author in a pamphlet bearing that title, published in Edinburgh in May, 1871.

‡ He there cites, as illustrative examples, the *Panics* of the year 1845, and the descriptions given of them in the “Edinburgh Review” for 1849.

§ *Stampede* is apparently a Mexican (Spanish) word. Miss Isabella Saxon, in her “Five Years within the Golden Gate” (California), describes the following incident as occurring near Council Bluffs, on the overland route from Chicago to San Francisco, 1868 (p. 280):—“We had here what the travellers call a *Stampede*; or the bullocks unharnessed taking flight and scampering off in all directions, often knocking down or trampling upon all in their way. It required much trouble on these occasions, and even considerable *danger*, to recover them.”