

hours. In all the result of the bleeding was most satisfactory, and the mothers made a good recovery. In three cases the convulsions ceased immediately after bleeding. On reading over these cases carefully I cannot see how the good result can be due to anything but the bleeding. Artificial delivery, which is usually considered so all-important a remedy, was only had recourse to in three cases, and chloroform in one. The other means employed were purgatives, cold to the head, and counter-irritation. But the most conclusive case of the kind which I know, is one which occurred to my brother, Mr. S. H. Swayne, and was recorded by him in the BRITISH MEDICAL JOURNAL for June 20th, 1863. A woman in the seventh month of her pregnancy, was attacked with puerperal convulsions, for which blisters, cold to the head, purgatives, and enemata were administered without effect. The urine, on being examined, contained so large a quantity of albumen that the deposit formed by it occupied about five-sixths of the whole bulk of the fluid examined. She was bled on the next day to twenty-five ounces. No more convulsions occurred. Some urine, passed within twenty-four hours after the bleeding, was examined, and the albumen was found to occupy only one-sixth of the whole volume after subsidence. Although the fœtus appeared to be dead, no attempt was made to deliver, because there was no dilatation of the os uteri. The woman went on well for twelve days, when labour set in, and terminated favourably, without convulsions, in the birth of a dead child somewhat decomposed. My brother remarks respecting this case, that "no other exciting cause for the convulsions beyond the uræmia could be discovered; and that the presence of the fœtus in the uterus had little share in bringing them on or maintaining them, would seem to be shewn by the cessation of the convulsions and of the albuminuria, notwithstanding the presence of a dead child in the uterus; and by the uterus remaining quiescent for a fortnight after the first fits. That the improvement was due to the measures employed, especially to the bleeding, can, I think, scarcely admit of a doubt."

The *modus operandi* of bleeding is not quite so evident, because obstetric writers are not yet agreed as to what are the essential causes of puerperal eclampsia. It is quite certain that these convulsions are usually accompanied by cerebral congestion, and also by a state of toxæmia as shown by the presence of albuminuria; but it is not so certain that they are produced by either of these conditions. It is most probable, however, that such is the case, and hence we can readily understand why bleeding should afford such signal relief, by diminishing cerebral and (as is shown in two of the cases narrated above) renal congestion, and thus removing the two most powerful causes which act immediately on the nervous centres, or, as they have been termed, the "centric" causes of puerperal convulsions. Amongst the "eccentric" causes, or those which act on the peripheral nerves, the most frequent and powerful is, undoubtedly, uterine irritation; and the most efficient remedies for this condition are chloroform and delivery. With respect to chloroform, I do not intend to detract in the least from its merits as a palliative, or as, in fact, the most effectual sedative we know of, for mitigating the severity of the fits and tranquillising the patient whilst artificial delivery is being effected; or again, as a curative in those exceptional cases of purely reflex convulsions occasioned by great irritation of the uterus or some other organs; but at the same time it ought not in most cases to be considered as a substitute for bleeding, which, when convulsions arise, as they usually do, from centric causes, is a remedy in my opinion far superior in efficacy to chloroform and even to delivery.

BROMIDE AND BIBROMIDE OF MERCURY AS THERAPEUTIC AGENTS.*

By PROTHEROE SMITH, M.D.,
Physician to the Hospital for Women.

MERCURY, known and administered as a remedy by Paracelsus, has ever since been used in a variety of forms, both in its pure state, and as oxide, sulphide, chloride, etc. Of these, its combinations with chlorine have been most generally used. In the present paper, I desire to draw attention to its combination with another element of the same group—bromine—forming the analogue of calomel and corrosive sublimate. Though, chemically, substances may vary only slightly in constitution, and may bear a certain analogy to another set of substances, yet, therapeutically, it is impossible from the knowledge of the effects of one body to premise the action of its analogue. We know little or nothing of the *modus operandi* of medicines, but are obliged to grope about ex-

perimentally and empirically till we arrive at the correct knowledge of the nature of a remedy.

The halogens, fluorine, chlorine, bromine, and iodine, remarkable for their affinity with substances at ordinary temperatures, are here mentioned in the order of their atomic weights; fluorine having the lowest. Their respective equivalents are as follows: Fl. 19, Cl. 35.5, Br. 80, I. 127. Their chemical affinity is in inverse ratio to their atomic weights; so, therefore, their power of decomposition is as their atomic weight. In the instance before us, the bromides appear to be therapeutically more active than the chlorides, as the iodides probably excel both, though the percentage of mercury in combination decreases from the chlorides to the bromides and iodides, as will be more apparent from the following table, showing the comparative percentage of the four elements above enumerated, and of the mercury in combination.

	The Halogen.	Mercury.
Fluoride of Mercury	8.8	91.2
Bifluoride of Mercury	16.4	83.6
Subchloride of Mercury (Calomel)	15.1	84.9
Perchloride of Mercury (Corrosive Sublimate)	25.9	74.1
Bromide of Mercury	28.6	71.4
Bibromide of Mercury	44.5	55.5
Iodide of Mercury	38.9	61.1
Biniodide of Mercury	56	44

Hence these four elements, in their combination with mercury, show the following comparative percentage to their base; viz :

Fluorine	8.8 and 16.4
Chlorine	15.1 and 25.9
Bromine	28.6 and 44.5
Iodine	38.9 and 56

In exhibiting mercury, we either use it when minutely divided in the metallic state, as in blue pill and grey powder, or in the sparingly soluble form of calomel, or the soluble corrosive sublimate. As pure mercury is almost inert as a medicine, the action of the first two, due probably to some protoxide of mercury, is comparatively slow. Of the calomel administered, only a very small quantity is taken up; and there is a great diversity of opinion as to the method of its absorption. Dr. Headland, in his excellent observations on the absorption of mercury, states his belief that in the bile are to be found the elements of a solvent for calomel; and this he endeavours to substantiate by experiment. The perchloride, being soluble, is at once absorbed, and so readily acts on the system: its effect, therefore, can be more depended upon, and more accurately traced.

It may not here be uninteresting to make a few remarks on the action of the elements of this combination.

First, as to mercury, little need here be said, since so much is at present doing, both on the part of its advocates and opponents, that we are likely to have the question soon thoroughly sifted. Moreover, we are to receive during this meeting the Report of the Edinburgh Committee on the Action of Mercury, the names enrolled on which are a sufficient guarantee that we may confidently expect some valuable conclusions as a result of their investigations.

Secondly, with regard to bromine, it has seldom been given alone; and we are more conversant with its effects in combination as bromide of ammonium and bromide of potassium. Dr. Bazire, in a note to Professor Trousseau's lecture on Epilepsy, has left some valuable remarks on bromide of potassium. It acts chiefly on the nervous system, as a sedative, producing, to a certain extent, anæsthesia of the pharynx and palate. The sense of taste is impaired, if the medicine is pushed far. Sensibility of the conjunctivæ is lessened, and a general lassitude supervenes. The patient, however, retains the power of swallowing, together with a good appetite. For its wide-spread use, we are indebted to Sir Charles Locock, who brought it before the notice of the Royal Medical and Chirurgical Society fifteen years ago. Sir George Gibb, in writing on the action of bromide of ammonium, says that it has the power of absorbing hypertrophied structures, especially enlargement of the spleen, liver, lymphatic glands, and scirrhous growths. Now, in the bromide of mercury, the percentage of mercury being less than in the chlorides, and the percentage of bromine consequently greater, it would seem to indicate that the bromine is the active agent. At the same time, the mercury, being proportionately less, would seem to act only as an alterative. Reverting to Sir G. Gibb's observations: he considers the bromide of ammonium a tonic, improving the appetite, keeping the tongue clean, and often relieving dyspeptic symptoms. Moreover, it produces a clearing of the complexion when florid. It produces anæsthesia of the fauces, etc., more rapidly than the bromide of potassium. It is employed as a remedy for obesity, and as an emmenagogue. In Macnamara's edition of Neligan's *Medicine*, he mentions that bromide of ammonium is also useful in uterine and ovarian irrita-

* Read in the Medical Section before the Annual Meeting of the British Medical Association in Oxford, August 1868.

tion. He mentions also the bromides of mercury, and gives the dose of the subbromide (bromide) from one to two grains, and that of the perbromide (bibromide) from one-sixteenth to one-fourth of a grain; but I have usually found that the subbromide of mercury exerts a greater power than its corresponding salt, calomel.

Having been in the habit of prescribing the bromides of mercury during the past five years, and being impressed with their value as therapeutic agents, I wish concisely to point out their general effects, in the hope of enlisting others in this investigation; so that, by long and continued observation, we may together accumulate such knowledge of their powers as may enable us more accurately to judge of their merits, as compared with those of the chlorides.

I have found, with the protobromide or subbromide, that a less dose than of calomel is required; that it acts more agreeably and effectually, both as a cholagogue and purgative, without the depressing results so often observed to follow the exhibition of calomel. It seems to be useful in promoting the absorption of hypertrophied glandular and other morbid tissue with less constitutional disturbance than the chlorides. I have administered it, with apparent great relief, in cases of biliary congestion of the liver, in chronic hepatitis with enlargement, and in those skin-diseases which yield best to the influence of mercury. I might quote some interesting cases of large anomalous tumours of the abdomen sensibly diminishing, and in two instances wholly disappearing, under the use of these remedies—viz., the protobromide of mercury in half-grain doses, and the perbromide in the form of an ointment of four grains to the ounce of cold cream; also of uterine tumefactions and morbid deposits around the cervix uteri and in the connective tissue of the pelvis, treated with pessaries of the perbromide, as well as the ointment externally. I could cite other instances of acute and chronic inflammatory disease in which the bromides have been apparently of great use; but my observations have been as yet so limited, and the difficulties of making perfectly correct observations on the action of a new remedy are so great, that I think it best to forego such means of proving its value till a mass of evidence can be adduced which may better test the accuracy of my conclusions. With your permission, therefore, sir, I would here ask those members of the Association who may try these remedies to note their effects, and kindly to favour me with a report of their observations, so that I may, at a future time, publish the result of our united efforts; since to arrive at any definite ideas of the action of the bromides of mercury will, I feel sure, require the careful work of many observers.

This short paper, then, claims to be put forward, not as a complete account of a new remedy, but as a notice to the profession, with the view of stimulating others to take up and investigate the subject.

ON CARIES OF BONE.

By HOLMES COOTE, Esq.,
Surgeon to St. Bartholomew's Hospital, London.

I HAVE been long convinced that the results of operations undertaken for the removal of carious bone are unsatisfactory. We see case after case in which the surgeon gouges away as much as he dare of the diseased structure; and yet he finds, when the period for the cicatrization of the wound comes about, that the fistulous sinuses still remain open, and that the annoyances to the patient are as great as before. A second and a third operation may be recommended and performed, and still the relief is incomplete, until, finally, a cure is effected by natural processes.

These reflections lead naturally to the question, What is caries? Is the disease of such a nature as to admit of beneficial treatment by surgical operation?

We find, in reference to this question, no small difference of opinion among surgical authorities. Some mean by the term, simple ulceration of bone; others, chronic suppuration of the cancellous tissue. Mr. Stanley often defined it, in my presence, as "unhealthy ulceration of bone." Mr. Erichsen speaks of it as a disease characterised by increased vascularity, softening, and ultimate disintegration of the osseous tissue.

Perhaps the last definition expresses best the true nature of caries; but it is wanting in accuracy of detail.

Caries may be said to have its seat, with scarce exception, in the cancellous structure of bone, such as the bodies of the vertebrae, the bones of the carpus and tarsus, or the spongy extremities of the long bones. As already observed, the disease commences with increased vascularity (ostitis or osteomyelitis); and I think that I have never known it to be transmitted from the soft parts to the bone. It has always commenced in the bone itself. As the disease proceeds, it causes molecular disintegration of the osseous tissue, which comes away in the form of minute

fragments mixed with the pus. After a time, larger portions may perish and become detached; but, unlike that which is observed in simple necrosis, these carious sequestra do not represent the whole of the diseased part. One of the most intractable forms of caries is that termed *caries fungosa* (Volkman), which is characterised by both ulcerative destruction and the production of an abundant granulation. The bones become mouldering, osteoporotic and thinned, in parts absolutely destroyed, the medullary space being filled by a reddish-coloured marrow. The granulations lose their florid red colour and become pale; there is an abundant deposit of fatty matter in the neighbourhood; and the discharge becomes offensive and discoloured. It is this form of caries which especially attacks the bones of the carpus and tarsus. Portions of eroded bone may be detached, but the morbid action extends far beyond their sphere, and usually more bones than one are involved in different stages of the same disease. The pressure of the granulations is followed by absorption and alteration in contour, while the internal disintegration may terminate in leaving little more than an external shell of compact, but thinned and light tissue.

This is the disease, and such the conditions of the morbid parts, which we in modern surgery attempt to rectify by the operation of gouging away the diseased bone. The results have not realised my expectations, except in cases where bone, already detached, admitted of easy removal, or where an emptied cloaca, surrounded by healthy bone, could be scraped so as to relieve it of its soft and unhealthy lining.

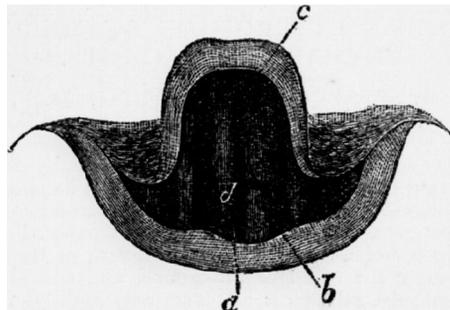
Under the most favourable conditions, the prognosis is far from good; but I am inclined to doubt whether the patient's condition would not be better after a period of twelve months, and simply kept at rest and in good air, than if he had undergone the usual operation.

A CONTRIBUTION TO BABY-FARMING.

By HERMANN BEIGEL, M.D., M.R.C.P.,
Physician to the Metropolitan Free Hospital.

THE following interesting case illustrates some of the evils of the system of baby-farming, which have been so ably exposed in the reports which recently appeared in the columns of the BRITISH MEDICAL JOURNAL.

Rebecca Levy, now twenty-four years of age, was, soon after birth, possessed of a loud and clear voice. When she was one month old, her mother fell ill, and was obliged to become an in-patient at a hospital, and to give her baby in charge of a woman to be nursed. Very little care was, however, taken of the child, who was left by her nurse in a room with the door closed, with very little food, and who consequently cried nearly the whole day. This continued for nearly twelve months, when the mother returned home, and took the child back, the latter being but ill-fed and perfectly hoarse. The girl never recovered her voice, and only experienced a difference in the degree of hoarseness. During the last few months, this condition had become at times alarming; fits of suffocation sometimes setting in, interrupting sleep, which was always accompanied by a whistling, rattling noise. The patient could never lie on her back without experiencing one of these suffocating attacks; and was, therefore, obliged to remain in a sitting posture during the night. On the 27th of May last, she came to the Metropolitan Free Hospital in a state of suffocation, and was admitted as an in-patient under my care. Her breathing was at this time extremely laborious; the ordinary muscles of respiration, as well as the auxiliary muscles, were in powerful action; the alæ of the nose were working violently; the visible mu-



cous membranes were livid; perspiration covered her face and forehead, her speech was very hoarse and thick; and, from want of breath, she could only pronounce short interrupted sentences.

Laryngoscopic Examination.—The pharynx was red. The larynx and vocal cords were as illustrated in the accompanying woodcut. Both