

PART III.  
HALF-YEARLY REPORTS.

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REPORT ON  
MATERIA MEDICA AND THERAPEUTICS.\*

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- ART. 15. Absorption of insoluble substances.  
" 2. Aconitine.  
" 13. Alcohol, elimination of.  
" 4. Antiseptics.  
" 8. Apomorphia.  
" 20. Atropia, uses of.  
" 16. Calomel, digestion of.  
" 5. Carbolic acid.  
" 23. Chloral.  
" 9. Dover's powder.  
" 21. Ergotin, in varix.  
" 19. Eucalyptus globulus.  
" 10. External applications, dangers of.  
" " " " ( $\alpha$ ). belladonna.  
" " " " ( $\beta$ ). emplastrum calefaciens.  
" " " " ( $\gamma$ ). cantharidism.  
" 1. Glycerine.  
" 22. Guarana.  
" 12. Hydrocyanic acid, action of.

\* The author of this Report, desirous that no contribution to the subjects of Materia Medica and Therapeutics should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal they will be forwarded.

- ART. 6. Hypodermic solutions.
- „ 3. Iodide of potassium.
- „ 7. Morphia, effects of.
- „ 17. Oleates of mercury and morphia.
- „ 14. Phosphorus, ( $\alpha$ ). absorption of.
- „ „ „ ( $\beta$ ). poisoning by.
- „ „ „ ( $\gamma$ ). administration of.
- „ 11. Quinine, ( $\alpha$ ). substitute for ergot.
- „ „ „ ( $\beta$ ). curious effects on retina.
- „ „ „ ( $\gamma$ ). effect on temperature.
- „ „ „ ( $\delta$ ). determination in urine.
- „ 18 Santonin, serious effects from.

1. *Glycerine*.—Attention has frequently been called to the impurities often found in glycerine reputed to be pure, and which are sometimes the cause of considerable irritation, and in former reports these points were brought under notice. Mr. J. Remington, of Philadelphia, has examined six different commercial specimens of glycerine, with the following results:—

Brands	Sp. Gr.	Colour	Odour when warm	With Nitrate of Silver
1	1.253	None	None	No pp <sup>t</sup> .
2	1.240	Yellowish	Fatty	Heavy white pp <sup>t</sup> .
3	1.250	Yellowish	Slight	Rose colour
4	1.254	None	Empyreumatic	No pp <sup>t</sup> .
5	1.250	Dark	Like glue	White pp <sup>t</sup> .
6	1.245	None	Slight	Rose colour

They all became more or less discoloured with sulphuric acid; Nos. 2 and 5 gave a ppt. with oxalate of ammonium; 2 and 3 with chloride of barium; and all presented traces of butyric acid, especially No. 2. All the samples were free from sugar.—(*Pharm. Journ.*, July 8, 1871; from *Proc. Amer. Pharm. Assoc.*, 1870.)

2. *Aconitine, crystallized*.—Great uncertainty has hitherto prevailed in respect to the constituent or constituents on which the active qualities of aconite depend, and four or five substances are known by the name of *aconitine*, which differ most materially in

their properties. Although the possibility of obtaining aconitine in a crystalline state has been demonstrated by Mr. T. Groves, in 1866, it is still described in the B. P., and is usually found in commerce, as an amorphous powder. MM. Gréhan and Duquesnel recently presented to the French Academy of Sciences an important memoir on aconitine, which M. Duquesnel has succeeded in extracting from *aconitum napellus* in the form of rhombic or hexagonal plates. By slightly modifying and simplifying the processes previously employed, M. Duquesnel has obtained a crystalline alkaloid, which he believes to be the veritable active principle of the plant. The best roots yield three or four parts per 1,000 of aconitine. Aconitine,  $C_{27} H_{40} NO_{10}$ , is a white solid, nearly insoluble in water, but soluble in alcohol, ether, benzine, and chloroform, which is the best solvent. It is not volatile, and is decomposed above  $140^{\circ} C$ . It is feebly alkaline, but is very soluble in dilute acids, and forms crystallizable salts. It gives the usual re-actions with the tests for the organic alkaloids, especially with the double iodide of mercury and potassium. Aconitine is a powerful poison, and, like curare, destroys the motor power of the nerves, but does not affect the power of producing reflex actions, at least in small doses.—(*Pharm. Journ.*, Jan. 27; Feb. 3 & 17, 1872.)

3. *Iodide of Potassium*.—It is satisfactory to find that, notwithstanding the enormous increase in the price of this salt, it still maintains its purity. The following table of a series of analyses of samples of iodide of potassium, obtained from various sources, is published in *The Practitioner* for January, 1872, and confirms the results of another examination, which were given in the Report for February, 1871. All the samples contained traces only of chloride of sodium; two of them, small traces of iodate; and one only, a small amount of carbonate. No other impurity was found in any of the samples. No. I. White, very large opaque crystals, dry. No. II. White, large opaque crystals, slightly moist. No. III. White, large opaque crystals, slightly moist. No. IV. White, very large opaque crystals, dry, contains a minute trace of iodate. No. V. White, small opaque crystals, slightly moist, contains 1.24 per cent. of carbonate of potassium. No. VI. White, large opaque crystals, dry, traces of iodate:—

No.	Moisture	Iodine	Chlorine	Iodate
I.	1·16	74·15	0·40	None
II.	1·69	73·75	0·35	None
III.	1·90	74·10	0·25	None
IV.	0·66	76·88	0·25	Minute trace
V.	2·20	72·76	0·12	None
VI.	0·83	74·15	0·80	Trace

Pure dry potassium iodide contains 76·50 per cent. of iodine.—  
(*Pharm. Journ.*, Jan. 20, 1872.)

4. *Antiseptics, their action and uses in Surgery*.—Mr. C. Roberts, while admitting the value of antiseptics, thinks that the theory of their action adopted by Mr. Lister is open to much doubt, and he believes that a simpler and more satisfactory explanation can be given, based on chemical and clinical experience. Time is an important element in the healing of wounds, and any agent which will simply coagulate the secretions, and so retard their decomposition for a few days, will be as useful an antiseptic as the more pronounced ones, such as carbolic acid, chloride of zinc, or chloride of aluminum. He points out that a wound which does not heal by first intention passes through three stages—(1) the fresh wound; (2) the stage of decomposition; and (3) that of granulation and cicatrisation. Antiseptics are useful, when applied to fresh wounds, by coagulating and fixing the albuminous secretions and tissues, and so postponing the stage of decomposition. Thus more time is given for the wound to heal, and any substance which will coagulate albumen will be as efficacious as carbolic acid for this purpose, and will prove efficient quite independently of the destructive action on organic germs which it may possess. Once a wound has failed to heal, and the putrefactive stage is fairly established, carbolic acid is useless, for it exerts no power over the *products* of putrefaction, and is itself a poisonous and irritating application. Solutions of chloride of zinc answer the double purpose of an antiseptic and disinfectant, and are not so irritant and poisonous as carbolic acid. For a granulating wound antiseptics, as such, are not only unnecessary but injurious. For practical purposes it is not of the least importance whether we exclude the organic or

the chemical and physical elements of the atmosphere, or render the tissues and secretions invulnerable to their attacks. Carbolic acid, no doubt, does both, but, as chloride of zinc and other non-volatile substances possess this latter property and not the former, it is reasonable to conclude that the explanation now given is probably the true one of the action of antiseptics in surgical practice. The credit of the introduction of this method is strictly due to Mr. de Morgan and Dr. Humphry, and Mr. Lister's complicated practice has retarded rather than advanced its development.—(*Lancet*, April 27, 1872.)

Dr. Crace Calvert has examined the relative power of thirty-four substances to prevent the development of protoplasmic and fungus life, and to arrest putrefaction, and finds that they may be grouped as follows:—(1) Those which prevent the generation of fungi and vibrios—viz., cresylic and carbolic acids. (2) Those which prevent the development of vibrios, but not of fungi—*e.g.*, corrosive sublimate, chloride of zinc. (3) Those which prevent fungi, but not vibrios—*e.g.*, sulphate of quinia, pepper. (4) Those which prevent neither one nor the other—*e.g.*, sulphur.

Dr. J. Dougall finds that *chromic acid* is the most powerful germicide known, and is the best preventive of animalcular and fungus life. Contrasted with carbolic acid we have—

CHROMIC ACID.	CARBOLIC ACID.
Free from smell.	
Strong affinity for water.	Weak affinity for water.
Combines with $\text{NH}_3$ , and decomposes $\text{H}_2\text{S}$ .	Does not.
Oxidises organic matter.	
A powerful germicide and preventive of fungi.	A weak germicide and preventive of fungi.
Coagulates albumen.	Coagulates albumen = $\frac{1}{10}$ power of chromic acid.

—(*Med. Times and Gaz.*, April 27, 1872.)

5. *Carbolic Acid—action and uses.*—Salkowski (*Pflüger's Arch.*) considering it highly probable that variola depended on a *contagium vivum*, administered carbolic acid in this disease during the epidemic which raged in Königsberg, 1870–71, expecting to find the utmost benefit from its employment. But, after extensive trial, his verdict is, that the acid exerted no perceptible action on

the disease, nor did it shorten its course. In other diseases of a non-infectious nature, however, in which he tried it, decided benefit resulted from its use—viz., in gangrene of the lung, prurigo, and some cases of vomiting. The acid is absorbed unchanged into the blood, and can be detected in it. It is partly excreted by the kidneys, and partly oxidised in the blood into oxalic acid. The dark colour of the urine which occurs after its use is due to some product of its oxidation, but the depth of the colouration is no indication of the amount of acid present, and it is not at all necessary to stop giving the acid when the urine becomes dark. It is better to regulate its administration according to its effect on the digestive functions. As a rule, it should be very freely diluted, and only given in a concentrated form in very exceptional cases.—(*Brit. Med. Jour.*, May 25, 1872.)

6. *Hypodermic Solutions.*—M. Adrian points out that the choice between the pure alkaloid and its salts is not an indifferent one, for their salts vary in strength according to the equivalent of the acid which belongs to them, and also to the amount of water of crystallization which they include. Besides the salts are not always readily soluble in water, the solution often requires to be filtered, and filtration involves loss, and, in every case, fungi form in the solution after a time. The solutions of atropia and codeia are the most prone to change. The method he proposes in order to avoid these objections is as follows:—1°. To use exclusively the pure alkaloids, which are well defined, stable, and of a constant composition. 2°. To take as the vehicle *boiling* distilled water, containing 20 per cent. of pure glycerine. This ensures preservation for a long time. 3°. To employ sulphuric acid, diluted to  $\frac{1}{10}$ , as the solvent, in preference to other acids. The sulphuric solution keeps better. 4°. To substitute volumetric for gravimetric measurement. 1 part of morphia, atropia, and strychnia respectively, requires  $2\frac{1}{2}$  parts by weight of sulphuric acid, diluted to  $\frac{1}{10}$ , for solution. The solutions should be dilute. (*Rep. de Pharm.*, Mai, 1872.)

7. *Morphia—effects of.*—Hausmann (*Ber. des Naturwiss. Med. Ver.*) has observed, as Nussbaum and Mühe had previously done, that the subcutaneous injection of morphia is sometimes followed by peculiar effects—viz., pain and redness of face, contractions of the muscles of lower jaw, a frequent hammering pulse, dyspnoea, and clonic spasms of the limbs, which speedily pass off and

terminate by sweating. These effects are possibly due to the direct entrance of the morphia into a vein.—(*Brit. Med. Jour.*, February, 1872.) Compare Dr. Handfield Jones' observations noticed in Report, February, 1871.

8. *Apomorphia*.—Siebert, Riegel, and Böhme confirm its being a rapid and effectual emetic, acting in from four to sixteen minutes. The only unpleasant effects occasionally observed were giddiness, cerebral oppression, and precordial anxiety, and even these disappeared so soon as vomiting occurred. No digestive troubles nor local irritation followed on its subcutaneous injection. The most reliable preparation is supplied by Macfarlan and Co., N. Bridge, Edinburgh.—(*Edin. Med. Jour.* March, 1872, from *Berlin Klin-Wochenschr*, No. 5, 1872.)

As Dr. Pierce put it some two years since, apomorphia is pre-eminent in the smallness of the dose required ( $\frac{1}{15}$ — $\frac{1}{10}$  gr. hypodermically;  $\frac{1}{6}$ — $\frac{1}{4}$  gr. by the mouth), the certainty, rapidity, and completeness of its action, the absence of any serious effects, and its non-irritating character. In these respects it contrasts most favourably with the older emetics, and, when its costliness is reduced, will no doubt come into extended use.

9. *Dover's Powder—Improved Formula*.—An American physician, Dr. Keator, has made many attempts to improve on the nauseous compound, now known as Dover's powder, and recommends the following formula as being much superior:—℞. Morph. sulph. gr. x.; pulv. camph. ʒiii.; pulv. ipecac., ʒi.; cretæ prepar., ʒiii.; pulv. glycyrrh, ʒiii. Mix thoroughly. Dose, the same as pulv. ipecac. co. In 10 grs. of this powder there is  $\frac{1}{6}$  gr. of morphia=1 gr. opium.—(*Pharm. Journ.*, July 8, 1871.)

10. *External Applications — Dangers of*.—(α). *Belladonna plaster*.—Dr. J. B. Harrison relates a case occurring in a lady who was poisoned by a belladonna plaster. The symptoms she presented when he saw her were great confusion of mind, spectral illusions, inability to walk steadily; and next morning the throat was sore and dry, the fauces red, and a rash appeared on the body, so that it was thought she was labouring under scarlatina. The pupils were inordinately dilated. On inquiry it came out that the lady some little time previously (date not given) had put a large belladonna plaster over her back,

and that this plaster had occasioned so much irritation that it was removed, not; however, without causing considerable abrasion of the cuticle. The plaster was subsequently reapplied over the abraded surface, and after that the symptoms just mentioned appeared. The lady recovered shortly. Dr. Harrison mentioned another case in his own practice in which extract of belladonna applied to the breasts caused similar symptoms, and refers to several cases in the *Brit. Med. Journ.* for 1853 and 1866, in which symptoms of belladonna poisoning arose from the use of an atropia collyrium, belladonna plaster, and the liniment or extract of belladonna.—(*Brit. Med. Journ.*, May 18, 1872.) Compare cases of poisoning by collyria of atropia quoted in Report, Feb., 1870.

(β). *Emplastrum calefacicus*.—Dr. E. Gray mentions two cases that fell within his own experience, in which severe local inflammation followed in a week or so after the application of an ordinary warming plaster containing 1 part of cantharides in 25. In both cases, also, there was severe febrile constitutional disturbance, accompanied by an erythematous or eczematous rash on the face, neck, and upper part of the trunk. In each case the plaster had been applied to the side of the patient. Dr. Gray has once seen the common pitch plaster vesicate, and remarks, in passing, that the *linimentum crotonis* (B. P.) is too strong for ordinary use, since on three occasions he has observed a *single* inunction of it produce over the whole surface of contact intense erythema of the skin with a profuse crop of vesico-pustules.—(*Practitioner*, April, 1872.)

(γ) *Cantharidism*.—M. Gubler remarks that it is astonishing that a substance which proves so irritating to the tubuli of the kidneys as cantharides should be without effect on the blood-vessels, and he points out that the albumen of the blood plays an important part in preventing the production of the usual effects of this and similar substances by forming combinations with them, so that their powers are rendered latent, and are only manifested when set free by the kidney into a fluid that contains no albumen. If, then, cantharidism be neutralized in the vascular system by the proteids of the blood, it is obvious that it is useless to prolong the application of a blister after the vesicle has risen, since the cantharidin, by its solution in the fibro-albuminous liquid, loses its irritating properties. Hence, also, cantharidin exerts its irritant action on all the emunctories which discharge fluid destitute of albumen, such as the sweat and tears. In M. Gubler's wards, 176

blisters were applied in one year, and 16 instances, more or less marked, of cantharidism were observed, = 1 in 11; but in 4 of these the symptoms were very slight indeed, and in 1 only was there severe hematuria. He does not believe that camphor possesses the slightest power of preventing the injurious effects of cantharides.—(*Practitioner*, April, 1872, from *Bull. Gén. de Thér.*, Dec. 30, 1871.)

11. *Quinine*.—(α). *As a substitute for Ergot*.—It is well known among practical obstetricians that sulphate of quinia has certain effects on the uterus—*e. g.*, if given to young girls is apt to cause painful and scanty menstruation, and so far back as 50 years Torti and Puccinotti had noticed the stimulant action of quinine on the pregnant uterus. Several other authors have also observed abortion to follow the administration of quinine, but little attention was attracted by these observations. Within the last two years Dr. Monteverdi of Cremona has published a memoir in which he claims to establish that quinine possesses definite oxytocic powers. Half an hour after the administration of 3 or 4 gr. doses, slight painless contractions of the uterus are caused, which soon become more prolonged and powerful, with distinct intervals of repose as in natural labour. Quinine appears to him to be preferable to ergot because it exercises no injurious effect on the mother or child, because its action is certain, the contractions it provokes are regular and natural, and it is admissible at any period of pregnancy. Dr. Monteverdi finds quinine serviceable in the metrorrhagia of pregnancy, in amenorrhœa due to torpor of the uterus, and in puerperal fever, and he considers quinine as indicated in all atonic affections of the digestive organs and genito-urinary apparatus. If administered incautiously during pregnancy for other purposes it may induce abortion or premature delivery.—(*Rep. de Pharm.*, Mai, 1872, from *Gaz. Méd.*, Paris.)

M. Bouqué confirms Monteverdi's theory, and gives two interesting cases from his own practice in support of it.—(*Annales de la Soc. de Méd. de Gand*, 1872.)

(β). *Curious effect on the Retina*.—Mr. Vose Solomon reports a curious case with which he met in 1869. A man, aged 30, after taking a teaspoonful of Howard's sulphate of quinine for the relief of severe "tic," was soon affected with vertigo, chilliness, a sense of sickness, and *failure of sight*. When examined by Mr. Solomon nine days after, it was found that he could read brilliant

type (Jaeger's No. I.), a single letter only at a time, so contracted was his field of vision. There was complete anæsthesia of the visual field of the right eye, except at a point opposite the yellow spot, and in the left eye the temporal field was good, the nasal reduced to two inches. In all other respects the eyes were normal. Bromide of potassium was prescribed, and a small blister to the nape of the neck. The ophthalmic symptoms gradually subsided, but his brain remained irritable, and in 1870 the patient suffered from several epileptic seizures, but in December, 1871, he declared himself to be in perfect health.—(*Birmingham Med. Review.*)

(*γ*). *Effect on Temperature.*—In the Homerton Fever Hospital quinine has been given to children with enteric fever for the purpose of depressing the temperature and with remarkable results. In two cases it was shown that a fall in temperature had repeatedly taken place immediately after the administration of 3 gr. doses of quinine every 4 hours, and at no time was cinchonism induced. For example, one case, a girl aged 7, was admitted on the evening of the 9th day of enteric fever;  $T = 105^{\circ}$ . Quinine was at once given: immediately there was a fall in temperature, and on the evening of the 11th day,  $T = 97^{\circ}$ . Quinine was discontinued, and on the evening of the 12th day,  $T = 105^{\circ}$ . Quinine again given, and by the 14th day,  $T = 97^{\circ}$ . The quinine was much diminished, and by the 15th day,  $T = 103^{\circ}$ ; quinine repeated, and on 16th day,  $T = 98$ , and next day,  $= 97.5^{\circ}$ . Quinine again discontinued, and on the 19th evening,  $T = 101^{\circ}$ . Quinine re-commenced, and on 20th day,  $T = 98.5^{\circ}$ , and on 21st day,  $= 98^{\circ}$ , after which no further rise took place. The quinine was finally discontinued on the 22nd day.—(*Lancet*, April 13, 1872.)

(*δ*). *Determination in Urine.*—Quinine is eliminated in the urine, to which it communicates a bitter taste, but cannot be detected in it unless the patient has taken at least 10–20 grains. M. Landerer (*Schweiz. Wochens. für Pharm.*, 1868) recommends the following simple method for the determination of quinine in urine: Add ammonia; the precipitate contains the quinine along with lime and magnesia. Dissolve out the quinine by alcohol. Biniodide of potassium is a good re-agent for detecting and separating quinine in urine.—(*Rev. de Thér. Med. Chir.*, 1870.)

12. *Hydrocyanic Acid—action of.*—Dr. Amory has performed some experiments on this subject which lead him to conclude—1. That artificial respiration does not prevent the intoxication of

hydrocyanic acid, nor materially assist in its elimination. 2. Artificial respiration will prevent the occurrence of convulsions, or of muscular spasm. 3. Muscular irritability and nervous conductivity are not impaired by prussic acid poisoning in cases where artificial respiration has been maintained, until after the cessation of cardiac pulsations. 4. The static congestion of the pulmonary tissue is either a *post-mortem* appearance, or is due to asphyxia. 5. Death by prussic acid is due to some other cause besides asphyxia; possibly to a state of blood-poisoning. 6. The cerebral and spinal apoplexy found *post-mortem* is probably referable to the asphyxia secondarily induced, and not to the direct action of this poison.—(*Practitioner*, April, 1872.)

13. *Alcohol—elimination of.*—Dr. Dupré, continuing his investigations, points out now that a substance is found in the urine, after six weeks of total abstinence, and even in that of a teetotaller, which gives the re-actions ordinarily employed for the detection of small quantities of alcohol, and a volatile product is obtained which possesses the odour and chemical properties of acetic acid. This volatile substance, whatever it may be, also answers to the iodoform test for alcohol, and it is to be remembered, that M. Lieben, to whom we owe the iodoform test, has already detected the presence of a substance in human urine, as well as in that of animals, which yielded iodoform, and yet does not appear to be alcohol. There can be no doubt that this substance has sometimes been taken for alcohol, and has thus led some experimenters to the belief that the elimination of alcohol continued much longer than it really did.—(*Practitioner*, April, 1872.) Compare Parkes and Wollowiez's experiments on the action of alcohol.—(*Report*, Feb., 1872.)

14. *Phosphorus—(α).*—*Absorption of.*—MM. Husemann and Marmé have concluded, from their researches, that phosphorus, in the uncombined condition, is absorbed into the system, for it can be detected in the liver of carnivora and herbivora by Mitscherlich's process in a few hours after the injection of a very small dose of phosphorized oil into the stomach.—(*Lancet*, Jan. 12, 1867.) Mialhe confirms this view, and believes that the absorption of phosphorus is due, not to the chemical action of the alkalies in the intestinal juice, but to the fatty matters in the alimentary substances. Hence, in cases of poisoning, it is indispensable to

prohibit any food or medicine containing fatty matter.—(*Union Med.*, 1868.)

( $\beta$ ). *Poisoning by.*—Voit and Bauer find that fatty degeneration of the organs is produced by phosphorus, even in animals deprived of food, and extremely emaciated. The phosphorus diminished both the O taken and the CO<sub>2</sub> given off, but increased the urea excreted. Voit considers that the more rapid degeneration of the liver in acute atrophy is the chief difference between this disease and phosphorus-poisoning. Leucine and tyrosine are among the first products of decomposition of albumen. At first the fat is formed from the store of circulating albumen; afterwards, as in fasting, from the more firmly combined albumen of the organs; and lastly from that albumen which is essential to the constitution of the cells.—(*Brit. Med. Journ.*, May 11, 1872.)

Dr. Vetter, of Dresden, states that acute poisoning sometimes results from phosphorus being prescribed medicinally in too large doses, and he believes that it should not be ordered in the pure state at all. Intense inflammation of the stomach is not a characteristic of phosphorus-poisoning, but ecchymoses of serous membranes are common. The *treatment* he recommends is, first, an emetic of sulphate of copper (Bamberger), and then oil of turpentine (Andant), following this up, in a day or two, by a teaspoonful of magnesia, now and then.—(*Practitioner*, April, 1872; from *Med. Chir. Rundschau*, Feb., 1872.) In the previous Reports for 1869, 1870, and 1871, the evidence for and against the turpentine treatment of phosphorus-poisoning was given, and the mass of testimony in its favour is now very strong. Köhler reports another striking case of its value. A woman, aged 43, took, within five days, a decoction of the heads of 200 lucifer matches. The usual symptoms soon followed; and on the fifth day, when M. Köhler saw her, she was in a state of horrible suffering, and suffered from suppression of urine, and clonic convulsions of the muscles of the trunk and limbs. Pulse 120, small; respirations 28; temperature 37°, 6 C. Small doses of an ethereal solution of oil of turpentine were given every half hour, and continued for two days. Gradual improvement took place, and in a few days the patient was quite well. The urine was very acid, non-albuminous, and the proportion of phosphates was not increased.—(*Rep. de Pharm.*, November, 1871; from *Berlin Klin. Wochens.* 1870.) Eulenburg and Vohl propose *charcoal*, instead of turpentine, as an antidote to phosphorus.

( $\gamma$ ). Since the *administration* of phosphorus is attracting some attention it may be well to refer to two or three methods of prescribing it which have been proposed. According to Mialhe, phosphorus is best administered for therapeutic purposes dissolved in a fatty body, which prevents it undergoing change, and insures its complete absorption, without the inconveniences which attend its solution in ether or chloroform. The capsules of phosphorated oil, put up by Messrs. Graham & Co., afford a very convenient and elegant means of administering the drug internally. Dr. Radcliffe's formula for phosphorus pills is—Phosphorus 6 grs., suet 600 grs. Melt the suet in a stoppered bottle, put in the phosphorus, and, when liquid, agitate the mixture till it becomes solid; roll it into 3 gr. pills, and cover with gelatin. Each pill will contain  $\frac{1}{3}$  grs. of phosphorus.—(*Pharm. Journ.*, June, 1866.) M. de Mussy proposes the phosphide of zinc as agreeing better with the stomach than any other preparation of phosphorus. Dose  $\frac{1}{3}$  gr. in pill. It is prepared by projecting the vapour of phosphorus on boiling zinc in dry hydrogen gas.

15. *Absorption of Insoluble Substances.*—In the last Report (Art. 9), the experiments of Neumann on the absorption of metallic mercury through the skin were briefly noticed. Dr. Auspitz concludes from his experiments:—1. That in mammals, insoluble matter (starch granules) starting from the peritoneum and subcutaneous tissue is able to reach the lungs, and through these organs to enter the general circulation. 2. That these granules first pass through the lymphatic system. That they are taken up exclusively in this way is not proved. 3. That the epidermis always presents a considerable, though only relative and not absolute, obstruction to absorption from the cutaneous surface. 4. That absorption is essentially promoted by the mediation of fat. Hence, probably, what is true of fat and of starch-flour may also be asserted of other insoluble bodies of finer division, and, therefore, less permanence of form than the starch-flour.—(*Edinb. Med. Journ.*, March, 1872.)

16. *Calomel, digestion of.*—Mr. Tuson has made some interesting experiments initiative of an inquiry into the effect of the gastric juice upon insoluble mineral substances. Experiment I. A mixture of pure calomel and distilled water, containing 2 per cent. of hydrochloric acid, was placed in one vessel. Experiment II. In another vessel a mixture of calomel, pepsine (Bullock and Reynold's), and

distilled water. Experiment III. In another, a mixture of calomel, pepsine, and distilled water, containing 2 per cent. of hydrochloric acid. These mixtures were kept at 38° C. (100·2° F.) for 24 hours, and occasionally stirred or shaken. They were then filtered and the filtrates saturated with sulphuretted hydrogen. The filtrates from I. and II. remained unaltered, but that from III. gave a black precipitate of Hg S. These simple experiments, which have been repeated with success by Dr. Symes Thompson, therefore, show that neither dilute H Cl (2 per cent.), nor pepsine alone is capable of dissolving calomel, but that when these agents are mixed, they do affect its solution, and consequently, that the digestion of calomel, so far as its solution in artificial gastric juice is concerned, is brought about under the same conditions as that of the albumenoids. These experiments serve also to remove much of the difficulty previously felt of accounting for the effect of a salt insoluble in acid, and is of value as showing why calomel does not produce its characteristic effects in cholera, and other conditions in which the digestive powers are in abeyance, or where the active ingredients of the gastric juice are wanting.—(*Med. Times and Gazette*, May 4th, 1872; *Pharm. Journ.*, Dec. 23rd, 1871.)

17. *Oleates of Mercury and Morphia.*—As local medicated applications in the treatment of *persistent* inflammation, Mr. J. Marshall recommends oleate of mercury (containing 5, 10, or 20 per cent. of oxide of mercury) as a most advantageous substitute for ordinary mercurial liniments or ointments. It is more cleanly, more easily applied, and much more readily absorbed. It should not be rubbed in, but merely applied with a brush or spread lightly over the part with one finger. Combination with a little morphia (1 gr. to 3i. of the oleate), relieves pain and allays nervous irritation. Illustrative cases are given, and numerous instances of the utility of these preparations are mentioned, for which we refer to the original paper in *Lancet*, May 25, 1872.

18. *Santonin, serious effects from.*—A lady gave to her child, not 2 years old, 7 c. grm. (1·05) of santonin in the morning, fasting. The child was uncomfortable through the day, could not urinate, vomited in the night, and next morning had cramps and convulsions, followed by a heavy sleep and abundant perspiration. Under suitable treatment by M. Andant, the child soon recovered, but remained for some time weak, and of an icteroid tint. The urine

on the second day was of a deep red.—(*Rep. de Pharm.*, Jan., 1872, from *Bull de Thér.*) Could the santonin have been adulterated?

19. *Eucalyptus Globulus*.—This gigantic tree, the blue gum-tree of Australia, has attracted considerable attention lately as an antiperiodic, and in M. Gubler's opinion it will probably prove worthy of being ranked with cinchona itself. From its febrifuge qualities in marsh and other fevers it has gained the popular name of "fever-tree," and Dr. Lorinser, of Vienna, reports that he employed it in intermittent fever with success. Gubler and Carlotti have also strongly recommended it. Professor Maclean, of Netley, says that he knows of no remedy, except perhaps morphia, hypodermically so efficacious in allaying pain, calming irritation, and procuring sleep, in cases of chest aneurism involving pressure on the vagus nerve or its branches, and in cardiac asthma, as the eucalyptus. Vanquelin and Leiciani have analysed it and have found, besides an essential camphorated oil, an extract resembling cinchona-resin, which yielded a basic substance forming crystalline salts, and, like quinia, giving a green colour with chlorine and ammonia. Preparations from the leaves have been introduced by Messrs. Savory and Moore. The dose of the tincture and fluid extract is  $\mathfrak{z}\text{i}$ . in water, two or three times a day.—(*Lancet*, April 20, 1872.)

#### SPECIAL THERAPEUTICS.

20. *Atropia*—uses in *Ophthalmic Surgery*.—Mr. Ernest Hart, after extensive experience, has been led to believe that there is a numerous class of cases in which mischief arises from slowness to employ atropia locally. He considers that we could, in the treatment of ophthalmic diseases, better afford to dispense with all other drugs, lotions, and applications than with this one *topical* medicament, and, excepting some obvious cases—*e.g.*, peripheral wounds of cornea with hernia of iris—there is scarcely one absolute contra-indication, save in the existing oval dilatation of the iris in glaucoma. But, in all cases of iritis, in contusions and injuries of the eye, the local instillation of a solution of atropia is the most precious of therapeutic means. It is as safe a rule in ophthalmic practice to use an atropia drop when in doubt as in whist to play a trump. The most useful formula is:—Neutral sulphate of atropia, gr. ii.; glycerin, 5 drops; distilled water, 1 ounce; one drop as required; or, the convenient and reliable atropised gelatin discs

may be used. He also points out that our line of treatment now is much simplified, and that, so far as regards local and surgical means, with a little cotton-wool, alum, and glycerin, hot and cold water, atropia, and a pocket case of instruments, we can treat, with a previously unattainable success, nearly the whole range of ophthalmic cases. In the average run of ophthalmic diseases, whether for the treatment of a large proportion of the inflammatory disorders of the eye, by securing anæsthesia and physiological rest, or, in the diagnosis of optical defects, atropia is of ever-recurring use.—(*Brit. Med. Journ.*, April 27, 1872.)

21. *Ergotin subcutaneously in varix.*—Dr. Paul Vogt, of Greifswald, led by the results attained by Langenbeck, Schneider, and Dutoit in aneurism, tried this remedy in varix of the lower limbs. A man, aged sixty, who had for years extensive varices of the leg, was treated on this method by subcutaneous injection of 12 c. grm. of ergotin (dissolved in equal weights of spirit and glycerin) at the proximal end of the varix, and with complete success.—(*Brit. Med. Journ.*, April 27, 1872; from *Berlin Klin. Wochenschr.*, March, 1872.)

22. *Guarana in sick headache.*—Dr. Wilks calls attention to the use of this drug as so encouraging in the treatment of sick headache, and asks for further information. His attention was called to it about two years since by Mr. Helmcken, of British Columbia, and more recently, by Dr. Wood, of Montreal.—(*Brit. Med. Journ.*, April 20, 1872.)

*Guarana* or *paullinia* is a paste prepared from the seeds of a Brazilian plant, *paullinia sorbilis*, in a manner somewhat similar to chocolate. It possesses a peculiar odour, a bitter astringent taste, and contains no inconsiderable amount of caffèin. A full account of its properties and uses will be found in Guibert's *Nouveaux Médicaments*, 2<sup>me</sup>. edit., p. 17.

23. *Chloral, Contra-indications to.*—Liebreich points out the following:—1°. Extended destructive affections of the mucous membrane of the digestive tract. 2°. Arthritic conditions are unfavourable, unless the blood be first rendered alkaline. 3°. In typhus fever, if given at all, it should be in small doses. 4°. In affections of the circulating apparatus, particularly in serious valvular and other troubles of the heart, small doses should be used.

5°. Hysteria is often a counter-indication, the condition of excitement being sometimes increased. 6°. Jaundice has been regarded as a contra-indication, but this is doubtful. It should never be given in solution stronger than 1 part to 5. It may be mixed in beer, wine, beef-tea, or mucilage; syrup of orange-peel is preferable. The so-called syrups of chloral are solutions in glycerine with sugar. Habitual use does not call for increase of dose, and long-continued use does not impair the general health.—(*Med. Press and Circ.*, Feb. 21, 1872, from *Gaz. Hebdom.*)

*Strychnia Poisoning treated by Chloral.*—Dr. Angus Macdonald had prescribed for a patient five drops three times a day of liquor strychnia (B.P.), which were continued for one or two months without any disagreeable results. On the morning of January 30, 1872, he took his usual dose before breakfast, but may possibly have taken two or three drops in excess. He left home immediately after breakfast without feeling in any way ill, but when about a quarter of a mile from his home, he felt giddy, and experienced a tendency to stagger, and getting gradually worse, he drove to Dr. Macdonald's house, and arrived there three-quarters of an hour after swallowing the dose. At that time his lower limbs were rigidly extended, as also the neck and trunk, so that he was unable to get out of the cab, and was with difficulty removed. The spasms recurred at intervals of less than a minute, and were attended with severe pain. Chloroform was at once administered, but gave only temporary relief, and one hour after swallowing the poison he was given 30 grs. of chloral, and in a few minutes 20 grs. more. Shortly after this the spasms diminished rapidly, both in frequency and severity, until, about one hour and a half after taking the strychnia, they ceased altogether, and after a short sleep he felt quite well, except for a certain amount of giddiness. The case is of interest as showing the mitigating effect of chloral on strychnia, even though the dose of the latter was far from fatal, and it appears to illustrate the cumulative property of strychnia.—(*Edin. Med. Jour.*, April, 1872.)

Another writer, the author of a prize essay (*Lyon. Medic.*, 1872), finds that the actions of chloral and strychnia are antagonistic, but the action of strychnia is more powerful, so that an animal put asleep by chloral can be awakened by strychnia, but, once under the influence of strychnia, it cannot be put to sleep by chloral. The actions of calabar bean and chloral are also antagonistic, but that of chloral is more powerful (*Brit. Med. Jour.*, May 11, 1872).

These conclusions agree in the main with those attained by previous experimenters.

*Eruption following on use of Chloral.*—Several cases of the occurrence of an urticarious eruption after moderate doses of chloral have been published, and Dr. Burman records two cases occurring in the Devon Lunatic Asylum in which a bright red scarlatinaform eruption came out over the whole body, attended with fever and sore throat, and followed by desquamation. In each case there was a relapse of the rash and febrile symptoms, and there does not appear that there was any reason to suspect the existence of true scarlatina. One case was a woman, aged thirty, of feeble bodily health, and suffering from acute melancholia. The other case was an imbecile woman, aged twenty, who was ordered 20 gr. doses of chloral.—(*Lancet*, March 16, 1872.)

*Chloral compared with Hyoscyamus and Bromide of Potassium.*—Dr. J. A. Campbell has tested these medicines, in single doses, a large number of times, on fourteen cases of maniacal excitement, and concludes from his observations:—1°. That both chloral and tinct. hyoscyami are sure sedatives to maniacal excitement. 2°. That chloral is the more sure hypnotic. 3°. That chloral acts more quickly than tinct. hyoscyami. 4°. That though bromide of potassium in 60–90 gr. doses is a sedative to maniacal excitement, and, to a certain extent, hypnotic, it cannot control severe cases. 5°. That ʒiii. tinct. hyos. = nearly 30 grs. of chloral.—(*Practitioner*, April, 1872, from *Jour. Mental Science*, January.)