

which the blood of the *collateral* vessels, finding a passage widely open for it in the parts supplied by the ligature, flows thitherwards, and produces both the coagulation and the concomitant elevation of temperature. In the case of the kidney and of the spleen, however, another explanation must be offered. In both cases the arterial supply may be *entirely* cut off, yet the kidney, if watched after the operation, may be actually seen to swell; and if the renal artery between the ligature and the kidney be divided, hemorrhage occurs, which M. Brown-Séquard states lasted during the eight or ten minutes he permitted the animal to live. It is obvious that a *reflux* of blood must here have taken place; and this is due to the fact that the blood throughout the body is subject to considerable pressure during life, occasioned by the elasticity and contractility of the vessels; but if a vaso-motor paralysis exists in any organ—as the kidney, for example—and if the *vis a tergo* of the blood have ceased in consequence of the interruption of the blood-current in the arteries, the diminution of resistance in the vessels of this organ will cause the blood to regurgitate thither through the veins, and produce congestion.

M. Brown-Séquard remarks in passing, that those experimenters who believe that they have demonstrated that the heart can continue to beat in spite of the stoppage of the circulation through its vessels consequent on ligature of the cardiac arteries, have not taken into consideration the fact that a venous reflux occurs, which fills the vessels of the heart in consequence of the vaso-motor paralysis caused by the application of the ligature.

However this may be, a difference is thus shown by M. Brown-Séquard to exist between the case where a main artery of a limb is tied and that where all the vessels distributed to a definite region—as to the kidney—are ligatured. In the former case the venous reflux cannot take place in consequence of the continuation of the ordinary current of the blood from the arteries to the veins through the collateral channels; whilst in the latter case such reflux must certainly occur. In both instances, however, it may well happen that, the quantity of blood passing in a given time into the part where the vaso-motor paralysis exists being less, whilst the vessels themselves are dilated and consequently capable of containing more blood, this has time to become sarcharged with carbonic acid; and we have thus one cause at least of the convulsions and other nerve troubles that are sometimes observed immediately, or almost immediately, after the ligature of one of the primitive carotids in man.—*Lancet*, Dec. 2, 1871.

MATERIA MEDICA AND GENERAL THERAPEUTICS AND PHARMACY.

6. *Eucalyptus Globulus*.—Dr. M. C. MACLEAN states (*Practitioner*, Nov. 1871) that he has used the leaves of this plant in the medical wards of Netley Hospital, in cases of chest aneurisms involving pressure on the vagus or its branches, and in cardiac asthma, with marked benefit. Dr. M. says that, with the exception, perhaps, of the subcutaneous injection of morphia, he knows of no remedy so efficacious as the *E. globulus* in allaying pain, relieving dyspnoea, calming irritation, and procuring sleep, in patients suffering from the distressing symptoms induced by pressure on the vagus and its branches, caused by aneurisms rising out of the chest.

The mode of using this remedy is for the patient to smoke cigars made from the leaves of the plant, or by smoking the leaves in a pipe.

In cardiac asthma, Dr. M. has known it to allay the terrible dyspnoea of this affection, when the patient was incapable of smoking the leaf as a cigar or in a pipe, by burning portions of the leaf in a plate near the patient, in the way nitre-paper is familiarly used.

Dr. M. is of the opinion that the action of *E. globulus* is on the nervous system, particularly the vagus.

7. *Monobromized Camphor*.—Prof. DENEFFE, of Ghent, states (*Presse Méd. Belge*, Nov. 19) that for more than two years he has employed a combination of camphor and bromine, which he thinks is entitled to general attention. The celebrated chemist Laurent showed that bromine will easily unite with camphor at the ordinary temperature, but that the product is slowly decomposed by exposure to the air. M. Swartz, Professor of Chemistry at Ghent, has shown that this body heated in a closed vessel is resolved into hydrobromic acid and a crystallized compound which is monobromized camphor (*camphor monobromé*), a body differing only from ordinary camphor by the substitution of an atom of bromine for an atom of hydrogen. It is a perfectly crystallized substance, fusible at 76° C. and boiling at 274° . At Professor Swartz's request, M. Deneffe has investigated the therapeutical properties of this body, and has found it to be an excellent sedative for the nervous system. He intends shortly to publish his cases in proof of this, and, in the present communication, furnishes one of these, in which excitement of the nervous system passing into true delirium tremens was effectually relieved. He prescribed it in the form of pills, seventy grains being made into thirty pills, of which one was given every hour until twenty had been taken. For three days longer from forty-five to sixty grains were given in the twenty-four hours, the quantity being diminished from forty-five to thirty grains daily for a week longer. The recovery was progressive and stable.—*Med. Times and Gazette*, Dec. 2, 1871.

8. *Ozokerit as a Therapeutic Agent*.—Dr. SAMUEL PURDON calls attention (*Dublin Quar. Journ. Med. Sci.*, Nov. 1871) to this substance in the treatment of certain forms of cutaneous disease. "Ozokerit is a vegetable wax, so to speak, or, if you like to apply a more sensational term, 'a burning earth.' It is a hydro-carbon found in Moldavia, Wallachia, the Caucasus, and near the Caspian Sea. From the latter place it is obtained in great quantities, being largely used there for its illuminating properties. It was discovered some years since by a Russian military officer, who communicated the fact to M. Gustave Siemens. The latter gentleman, it is asserted, introduced it into England. In the crude state it is of a dirty greenish colour, and of a light specific gravity, and somewhat fibrous in structure. When rubbed in the hand for a few seconds, it feels like ordinary wax; it readily melts, and a rude candle can be easily made of the 'raw material,' and a cotton wick."

It has been refined so as to form a snow-white, hard, waxy substance. Dr. P. says, however, that the crude article and the yellow oil are the best for medicinal purposes.

"The action of ozokerit," Mr. P. says, "appears to be similar to that of tar; it is not, however, so dirty. The crude is the best, but for private practice the refined may be employed mixed with glycerine. At the hospital we merely mix the dark ozokerit by hand with equal quantities of linseed oil, which, although not a very nice-looking compound, and rather lumpy, still, when rubbed well in with the hand, soon melts. I think this slowness in melting an advantage, especially in such affections as psoriasis. The oil can be used combined with lard, but is inferior to the crude material. Its action appears to be that of a stimulant to the diseased skin. Without lengthening this communication by the recording of cases, I may briefly say that the ozokerit, compared with tar, 'Hebra's tincture' (equal parts of black soap, tar, and methylated spirit dissolved by heat), carbolic acid, and oil of cade, holds its own. Of course, in many cases constitutional remedies were employed. It is only suitable for chronic affections, as eczema, of long standing, and unaccompanied by much infiltration of the subcutaneous cellular tissue, psoriasis, tinea tonsurans, and scabies.

"I have suggested to the Messrs. Field, who are also great soap manufacturers, the desirability of making an ozokerit soap for medicinal purposes."

9. *Iodized Hydride*.—Dr. B. W. RICHARDSON, in his lectures on experimental and practical medicine (*Med. Times and Gaz.*, Sept. 23, 1871), makes the following very instructive remarks on this compound:—

"Iodine dissolves readily in amyl hydride, and produces, in the proportion

of twenty grains to the ounce, a solution of great service in practice. When this solution is applied to the skin, the volatile hydride passes off at once as vapour, and leaves the iodine, in considerable quantity, behind, stranded on the part in most equal form of distribution. This application is of singular utility in cases of hard open sores, where it is desired to apply iodine evenly and deeply. Thus, in cases of open strumous glandular disease, the solution plays an important part as a means of cure, and the same in chronic indolent bubo. In bad slooing fetid ulcerative and suppurative wounds, and in cancer, no solution is so simple, painless, and effective. In these last-named cases the iodine exerts more than a corative influence—it deodorizes; it destroys decomposing organic products; it prevents the absorption of decomposed products, and protects against the secondary fever depending on such absorption. In applying the solution in the cases named, it may be gently poured over the part. There is necessity neither for cotton-wool nor for the brush.

“From the iodized solution of the hydride, iodine itself may be inhaled with advantage in cases of ulcerated throat, and in cases of cavity of the lung. Indeed, whatever value in the treatment of phthisis and of bronchial phthisis there is in iodine, it is best obtained by the mode of administration now being described. Of course we have amongst us much difference of opinion as to the actual value of iodine inhalation, and I do not suggest this method in support of any one particular opinion. I hold my own view, and in favour of the practice in fitting cases, but I wish, for the moment, merely to describe a ready method of applying the practice, so that all who wish may adopt it. In using the twenty-grain solution for inhalation, it is best to dilute it with more of the hydride until the vapour of the iodine given is scarcely at all irritating to the throat. The patient's own sensations on the matter are here the best guide, and with a very little instruction it is easy to secure that five grains of iodine shall be inhaled at one time. There is not the least occasion for hurry or for causing the slightest constriction of the fauces or pain. I usually administer from a little funnel of parchment paper, holding in it some finely teased cotton-wool, on which I drop the solution. From this funnel the patient breathes, holding it a short distance from the nostrils and mouth, so as to allow the admission of plenty of fresh air.

“The solution of iodine in amyl hydride has another application, adopted this time not to the sick person, but to the chamber of the sick. There is no agent at one and the same time so potent for purifying the air of the sick-room as iodine. I introduced it several years back for purifying the air of the room or ward in which sufferers from smallpox are lying; and from all parts of the world, but from India especially, I have received recognitions of the value of the practice. But there has always been some difficulty in carrying out the process. Diffusion by volatilization of the metalloid itself from a chip-box covered with maslin—a method invented by that able surgeon, Mr. Hoffman, formerly of Margate—although it is in many cases most effective, is in most cases too slow, and, if I may use such a term, too local; while the plan of driving off the iodine by heat from a porcelain or metal plate is not a plan to be safely intrusted to a nurse. But with the volatile iodide solution all difficulty subsides. We take a packet of ordinary filter-paper, the paper being cut into pieces three inches in diameter—in fact, cut as it is sold from the chemical storehouses—and on to a packet of one or two dozen, or more, of such papers, we pour the solution until all the pieces are fully saturated with it; then the papers are allowed to dry. They dry very quickly, and are put into a box ready for use. We give a dozen or so of these papers to the nurse, and tell her to keep some of them exposed to the air in two or three places about the sick-room, so that the odour of iodine may be faintly recognizable through every part of the room; and this done, all is done for ordinary circumstances. To meet any unusual unpleasantness of the air, the nurse may take one or two of the papers and burn them like a taper or spill, when the deodorization will be the more rapidly and determinately carried out.

“In instances where a room or ward has been occupied by infectious cases, and it is required to purify quickly and effectively, the iodized hydride may be used in the form of spray. The spray-producer to be employed must be con-

structed of glass, as a metal spray-tube is injured by the solution. Siegle's simple tube answers for the purpose well. It is advisable before using the solution to have the room to be disinfected completely stripped of all furniture, the walls rubbed down, and the floors well swept, scrubbed, and dried. Then, from different positions in the room, the iodized hydride should be distributed in spray. The solution containing twenty grains to the ounce is strong enough. The room should have all its windows and doors closed before the iodine is distributed, and the quantity of solution sprayed should be measured. Practically, I find that one ounce of the solution to four square feet of space is a good adjustment of quantity to space. After the iodine has been distributed from the spray-producer, the room should still be kept closed for twenty-four hours at least; during this time the iodine deposited, at first, in the finest layer on the floors, ceiling, and walls, slowly volatilizes, and, coming into contact with the organic matter, destroys it rapidly. It is prudent not to take a light into the room after the distribution of the solution, until the windows and doors can be reopened, as the amyl hydride vapour easily takes fire.

"The most persistent and offensive odour in rooms that have been occupied by the sick may, by this simple method, be more speedily purified than perhaps by any other known method. In asylum practice we get the most difficult of tasks of purification; for, from the bodies of the insane, organic compounds—probably of the sulphur class—diffuse and permeate everything, yielding the most offensive smells. As products of disease, these, perchance, have not a little to do with the unhealthy condition and physical derangement of the bodies from which they are emitted; and when they once fix in an apartment or room, they stay with a perseverance that is wonderful. I was consulted quite recently, not a house I visited, respecting a room of the house in which an epileptic man died, even months ago. This patient, during his fatal illness, suffered from profuse perspirations giving off the most offensive odours, and still in the room where he had lain, despite all efforts at cleansing it, there was distinct evidence of the odour. To remove this unpleasantness there is nothing that approaches iodine, as asylum experience has proved, and the best way of applying the iodine here, again, is by the spray process described. But when the process is being carried out, it must be carried out thoroughly. If the room be opened too quickly, and air be admitted so as to create too speedy a diffusion of the iodine, the cure will only be temporary, and after a lapse of three or four weeks the odour will be once more distinguishable; for these organic odorous products, if they be not absolutely destroyed, release themselves in time from the destroyer, and, being less evanescent, proclaim that the victory over them is incomplete."

10. *Anæsthetic Calcareo-glycerine for Burns, &c.*—Dr. de BRUYNE extols the following liniment for burns, &c.:

R. Freshly precipitated hydrate of lime, grammes iij.

Glycerine, grammes cl.

Mix, and bent moderately, and then add:—

Chlorinated chlorohydric ether, grammes iij.

The liquid thus obtained is transparent and clear. A compress of fine linen is thoroughly wet with this, and applied on the hurt part. Immediately over this is to be placed a piece of gold-beater's skin, impermeable taffeta, or even flannel, so as to secure complete occlusion, and prevent the evaporation of the liniment.

Dr. B. is convinced of the beneficial effects of this dressing, not only in burns, but also in ill-conditioned wounds; in atonic, callous, fungous, and foul ulcers; and likewise in certain cutaneous diseases, especially such as are dry and squamous, accompanied with pruritus.—*Revue de Thérapeutique*, Oct. 15, 1871, from *Journal de Bruxelles*, Jan. 1871.

11. *Experiments with Santonin.*—Dr. ROBERT FARQUHARSON records (*British Med. Journal*, Oct. 21, 1871) the following results of a series of experiments made with this article on himself:—

1. *Effect on Vision.*—Twenty minutes after swallowing five grains, I observed flames to assume a decidedly yellow colour, as though spirits were being burnt. Ordinary white gas globes became deeply tinted with yellowish-green, and writing-paper presented the same phenomena in somewhat less marked degree. During three hours the tints gradually increased, after which they faded by slow stages, until vision was restored to its normal standard.

The precise conditions under which these singular results take place, and the exact alterations of colour observed, have been submitted to most exhaustive study by a German physiologist, whose name I cannot now recall. Post-mortem examination proves that a true staining of the retina is rapidly produced, but it is not probable that this can be detected during life by the ophthalmoscope. This opinion I base on the authority of an eminent ophthalmologist, and on the fact that, in the somewhat parallel group of cases where yellow vision attends jaundice, I have been unable to discover any unnatural appearance on careful inspection of the fundus of the eye.

2. *Effects on the Urinary Organs.*—Five grains were taken at bedtime, and next morning an irresistible and almost uncontrollable desire to micturate was felt, the act being attended with some irritation and smarting. The urine was of a deep saffron yellow, staining the pot and linen precisely as bile. It was of specific gravity 1.028. The quantity was decidedly increased, and the area was somewhat in excess. The diuretic action continued during the day; and it was not until 8 o'clock P.M. that the secretion was quite free from foreign pigment.

3. *Effects on the Digestive Organs, and General Symptoms.*—Nausea and dryness of tongue were generally present; and on one occasion, after a ten-grain dose, well-marked tenesmus was experienced both by myself and by a friend who shared the experiment. After five grains, sleep was generally disturbed, and I usually woke unrefreshed, with sickness, frontal headache, and deficient appetite. But the best-marked symptom, and one which I have not hitherto seen described, was a feeling of profound and most unusual depression, accompanied by so much irresolution and want of confidence in my own powers, as to render me quite unfit for work of any kind. This invariably followed even a single five-grain dose; and, beginning with drowsiness and heaviness, ran on into very much that sort of melancholia which I imagine jaundice sometimes produces. This denotes an effect on the nervous system which ought not to be overlooked; and, should further investigation prove its occurrence to be constant, and not to depend on any peculiar idiosyncrasy of my own, we may yet find in antimony an agent of some value in the almost unexplored regions of mental therapeutics.

12. *Absorption of Gray Ointment and of Corrosive Sublimate through the Unbroken Skin.*—There is a difference of opinion as to whether mercury is absorbed through the unbroken skin. Dr. NEUMANN, in order to settle this question, instituted a number of carefully devised experimental researches, and from them comes to the conclusion that inunction of gray ointment on an unbroken skin, mercurial globules pass into the hair-sheath, then into the bulb, and into the superficially-opening sebaceous glands (less into those that open into the hair-sheath), and into the upper part of the sweat-glands. In what way and in what form they get thence into the circulation, he could not discover: probably they were changed to chloride and dissolved by the superficial glandular system.

But in the blood and internal organs, mercury which has been introduced by inunction or by sublimate baths can only be detected by chemical means. Mercury could not be detected, by chemical means, in the subcutaneous tissue.

Mercury does not penetrate through the horny epidermis.—*The Practitioner*, Nov. 1871, from *Wiener Med. Zeitung*.

13. *Influence of Alcohol on the Temperature of the Human Body.*—It is stated in the *Berlin Clin. Wochenschr.*, 1871, that S. RABOW, at the suggestion of E. Leyden, allowed certain patients—mostly convalescents from acute diseases—to partake of brandy and wine, in small doses, from two to three table-spoonfuls. Of twenty-five instances in which this was done, in twenty-three the temperature of the body was found to be raised 0.7, when it was carefully

tested at the axilla and in ano. In two the temperature remained unchanged. In two typhus patients, to whom four tablespoonfuls of wine were given, the increase of temperature was only 0.1. Dr. R. hence concludes with Ohencen, (Cbl. 1869 and '70), that from the depressing effects of alcohol as evidenced by the results of the great majority of experiments, as a therapeutic agent, it is of very little value. By the use of Hungarian wine, says Radzjewski (*Centralblatt f. d. Med. Wissenschaften*, 1871, No. 32), the same effect occurs, that is, a very trifling rise of temperature, as in the observations of Rabow. The latter gentleman made use, it is true, of only diluted alcohol. The same result, however, would have occurred had the ethereal oils been substituted. D. F. C.

14. *Some of the Ill-Effects of Bromide of Potassium.*—Mr. T. O. Wood, Medical Superintendent of Dunston Lodge Asylum, states (*British Med. Journ.*, Oct. 14, 1871) that bromide of potassium, "when given continuously and in large doses, produces a great variety of results, depending generally upon the constitution and bodily condition of the patient at the time of its administration. Its most dangerous effect is when, after a course of comparatively small doses which do not seem to be taking any great hold upon the system generally, or upon the mental symptoms to control which it is given, it suddenly, and without apparent cause or warning, displays its enervative effect, and rapidly reduces the patient to a condition of great bodily prostration, and completely alters the character of the mental symptoms. This physical prostration is at once evident. There are great muscular debility; dimness of sight, with dilated pupils; irregular gait, the patient reeling as though intoxicated; whilst nausea, vomiting, or purgation, with abdominal pain of a dullaching character, may also be present; the breath having a disagreeable odour, which seems peculiar to those who have been for any length of time under the influence of the bromide. Its effect upon the mental symptoms is no less marked. The patient who has been violently excited, glorying in his imaginary power of body and mind, becomes desponding, sullen, melancholic, and frequently lachrymose, often even despairing. One patient, who was discharged from this asylum 'recovered,' has since told me that he knew and felt for some time afterwards the effect of the medicine upon his mind. It produced a feeling of despondency which at times quite overcame him."

Having read Dr. Clouston's admirable paper on the combination of tincture of cannabis Indica with the bromide, Dr. W. resolved to give it a trial. Dr. C. says "cannabis Indica being a diuretic, and the bromide of potassium being carried off by the kidneys, it is probable that the former in that way helps to prevent the enervative action of the latter when given alone."

Mr. Wood tried this combination in two cases, and with very satisfactory results. In one case the bromide was pushed to a drachm and a half, with the same quantity of tincture of cannabis Indica, and eventually up to two drachms of each drug thrice daily, with the effect of producing "a state of drowsy calmness of the nervous system," and without, in this instance, producing any symptoms of dyspepsia, of physical exhaustion, or of threatened syncope; and thus, as far as these cases go, proving the utility of the combination.

15. *Methyl Hydride.*—Dr. B. W. RICHARDSON makes some instructive remarks (*Med. Times and Gaz.*, Sept. 23, 1871) in relation to this gas, better known under the name of fire-damp.

"In the mine, when the gas is evolved in large quantities, it becomes sometimes a cause of death. It is fire-damp, and, without explosion, it will kill by the same process of narcotism we witnessed in our experiment a few minutes ago. Of this mode of death we may feel assured that, whenever, unhappily, it occurs, it is one of the most painless of deaths. The death must be as easy as the process of going to sleep, and it is probably completed without so much as a struggle. It thus happens that, after this mode of death in the mine, the spectators who first view the sleeping dead are struck by the placidity of the expression of the dead. The bodies are seen in the position usually assumed during sleep—the trunk and extremities gently flexed, the muscles of the face

calm and pencefal, the whole cast that of a sleeper in profound and undisturbed repose. When we read of a body of men having been suffocated with fire-damp, the sorrow arising from the narrative may, therefore, be tempered by the reflection that the death was euthanasia, and was less painful than death is in general amongst humankind.

"To this assurance two other encouraging facts may be added. In death from methyl hydride the percentage of the gas in the air inspired must be very large. For this reason it is possible to live for a long time in a moderate mixture of the gas with air without being conscious of any peculiar effect; whilst recovery from even extreme effects of it is nearly instantaneous when air is freely readmitted. In cases, therefore, where a catastrophe from fire-damp has happened, no effort can be too prolonged on behalf of the sufferers. Hope, in such instances, should be sustained beyond hope; for the narcotic air that lays the man in prostrate sleep will kill only by sleep, will not kill with violence, and may fail to kill altogether.

"From the negative character of this gas, from its insolubility, it is easily carried out of the body. We have to-day witnessed this truth. It ought thereupon to be remembered, as a sequel and in practice, that the means for promoting recovery from the influence of the gas, when life is not extinct, are simplest of simple. The first and most important measure is artificial respiration. When the breathing has actually stopped for three or four minutes after the seemingly fatal inhalation of the gas by the lower animals, respiration may be restored by artificial inflation of the lungs; and in cases of death from fire-damp, when the human life appears to have been extinguished by the breathing of the gas, the process of artificial respiration ought to be as sedulously sustained as after death by drowning, the result being much more likely to prove a success. Together with artificial respiration, warmth—the warmth of a room filled with fresh-heated air—is of moment as a remedy; and near to every mine there ought to be a receiving-room, ready supplied with warm air, and with a simple double-acting bellows for sustaining artificial respiration.

"The day will probably come when some advance will be made in the art of restoring animation at considerable periods of time after what is now called actual death; and when that day arrives there will surely be no form of suspended animation so easy to treat as that from fire-damp. The heart under the influence of this gas outlives the respiration; the lungs are subjected to no extremity of congestion of blood on the one side, nor of exhaustion of blood on the other; the muscles are cast into no spasmodic strain; the nervous centres are oppressed with no extreme tension; the blood is saturated with no soluble poison. Indeed, as an animal killed by this gas lies dead before us—actually dead, so far as we now know about death—it is hard to believe, either from external or internal evidence, that the death has inexorably taken place.

"So much for methyl hydride when it is met with in mines as fire-damp. But we have not yet done with it; it also has an interest to us as marsh gas. In marshes, especially where the soil is of peat, the gas forms in large quantities; and for centuries past, long before the chemical nature and properties of the gas were at all known, it was supposed to be a true malarious poison, the cause of marsh fever.

"I wish at once to dispose of this long-sustained and popular theory. It is no doubt correct, that in places where marsh gas is abundant, malarious fever is prevalent and endemic. It may be that the marsh gas is sometimes a carrier of true malarial poison—I mean that the actual poison, with winter vapour, may be diffused through the gas; or it may even be that the presence of the gas in the atmospheric air is, after a long time, injurious to those who breathe the air. But, all these admissions made freely, the fact remains that the gas itself is in no sense of itself a malarious poison, and the theory that assigns to it malarious qualities is utter error. From direct observation I know that the gas may be breathed in the proportion of not less than thirty-five per cent., and although it produces temporary symptoms of drowsiness, sleep, and muscular prostration, it is harmless in other respects, and produces certainly no after-symptoms of a pyrexial character."

16. *On the Proportion of Atropia in the Roots and in the Leaves of Belladonna.*—M. JULES LEFORT, in a memoir read before the Academy of Medicine (Nov. 21, 1871), gave the following as the conclusions from his researches on this subject:—

1st. The leaves of belladonna contain a little less atropia before than after the flowering of the plant.

2d. The leaves should always be collected between the periods of flowering and fructification.

3d. The leaves of the cultivated and of the wild belladonna, gathered at the same period, and from plants of the same age, contain precisely the same amount of atropia.

4th. No comparison can be made between the amount of atropia contained in the leaves and in the roots of belladonna, because the richness of the root varies very greatly according to the age of the plant.

5th. The young roots of belladonna are richer in atropin than the roots of plants of more than two or three years old, because in equal weight the former contain more bark than the latter.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

17. *Tubercular Meningitis.*—Dr. JAMES CUMING, in his instructive report on medicine (*Dublin Quar. Journ. Med. Sci.*, Nov. 1871), remarks: "Hitherto the pathological researches made in cases of tubercular meningitis have been mainly confined to the encephalon, and consequently the descriptions of that affection relate to the lesions found in that organ alone. The morbid appearances presented being generally to a degree and of a character sufficient to account for the uniformly fatal termination of the disease, inquirers rested satisfied, and omitted to examine the remainder of the nervous centres. The difficulty of the task, the time and labour necessary to examine minutely the various regions of the spinal cord in a large number of cases, the unpromising character of the investigations as regards the lessening of the mortality of the disease, have all, no doubt, contributed to this result. Even on a cursory investigation of the subject, it would seem anomalous that tubercle should be so restricted as regards the site of its development to the base of the cerebrum, and that it should not be found in other parts of the nervous centres. Moxon¹ has reported an instance of tubercle of the spinal dura mater in a case of tubercular meningitis; and recently we have, from Lionville,² a careful examination of the subject, which has led that observer to the conclusion that tubercular meningitis is usually a spinal as well as a cerebral affection.

"For two years, during which Dr. Lionville's attention had been fixed upon this subject, the numerous cases of granular tubercular meningitis observed by him in children, adults, and persons advanced in life, did not, in a single instance, show the manifestation confined to the cerebral envelopes; in all there was a similar spinal affection; in all the cerebro-spinal form existed, although the predominance was sometimes considerable, either towards the envelopes of the brain or towards those of the spinal cord.

"When the cord and its envelopes were removed by the ordinary method from the spinal canal, he could not once recognize deep injections all around the dura mater, as well as even in a greater degree upon its inner surface. On making the longitudinal section of the dura mater, and endeavouring to turn to the side the two flaps resulting, the multiplicity of little vessels, gorged with blood, and in some points forming irregular sinuous figures, were at once observed in all cases. They were often covered with little tracts, rosy gray,

¹ Transactions of Pathological Society of London, 1870, p. 12.

² Archives de Physiologie par Brown-Séquard, Charcot, and Vulpian, 1870.