No. 1, January 1908. Price Re. 1.

THE

CALCUTTA JOURNAL

OF

MEDICINE:

A MONTHLY RECORD OF THE MEDICAL AND AUXILIARY SCIENCES.

तदेव युक्तं भैषज्यं यदारोग्याय कल्पते।
सचैव भिषजां श्रेष्ठो रोगेभ्यो यः प्रमोचयेत्।
चरकसंहिता।

That alone is the right medicine which can remove disease:
He alone is the true physician who can restore health.
Charaka Sanhitá.

VOL. XXVII.

Calcutta:

PRINTED AND PUBLISHED BY P. SIRCAR, ANGLO-SANSKRIT PRESS,
51, SANKARITOLA LANE.

1908.

Subscription for 12 *Nos. Rs.* 10 (14*s.*) *in advance; Rs.* 12 *in arrears.*

CONTENTS OF No. 1, Vol XXVII, 1908.

THE
CALCUTTA JOURNAL
OF
MEDICINE

Vol. xxvii.] **January 1908.** [No. 1.

1908.

The events connected with homœopathy during the past year ran a smooth course without disturbance. In India, its life was dull and prosaic without difficulty. There were fresh conquests but the encroachment was gradual and surreptitious. The knowledge of homœopathy imparted by the Indian schools and in general was of a common place and most of the recipients have not the power to understand the science of homœopathy. The practice of homœopathy is surely spreading but scientific homœopathy is losing ground. The old idea of infinitesimal dilutions still prevails. Notwithstanding the efforts of Dr. P. Jousset and others to impart a new light to the action of homœopathic dilutions, the old ignorance yet remains. There is a wide gulf between the old and the new. The old is based on the theory of solutions as all matters are finally dissolved. The new on the basis of recent scientific exposition holds the doctrine that matters and their infinitesimal ions are not dissolvable but they are divisible. The dilutions divide them in unequal proportion. No two dilutions can be perfectly equal containing the same number of ions. The difference in their number is not so much as to constitute a difference in their physiological or therapeutic action. The medicinal action depends on the ionic energy of drugs. The quantity of ions in each element

are not equal. Their numbers differ in different elements. The action of drugs depends on the particular nature of the ions in each element and also on their number. These are the fundamental notions which help to understand the action of homœopathic medicines.

The revolution of our notion with regard to the scientific action of medicine has created wide chasm between the old and the new theories. Since the days of Hahnemann, science has made such a rapid stride that it has become impossible to explain the action of homœopathic medicines in any other light except with the help of the ionic theory. The corpuscular action of homœopathic medicines has made it relevant to understand the ionic or corpuscular action of our organs. For these reasons, a scientific homœopathist must be a different man from a symptomatologist without any positive knowledge of the action of human organs and their pathological condition. Diagnosis of a disease with its particular dangers can only be the sure guide to relief or cure. The microscopic neurons and centrosomes can be helped by the ions of medicines. The microscopic bacilli can be prevented from action by the infinitesimal ions. The microscopically diseased structure wants similar ionic medicines to check its ravages. Of course, our action should be to specialise our medicines for specialised diseases. Common platitude of symptomatological relations, as is generally understood, can not help us in the minute research of scientific medicine.

It is evident that in our fresh invasion, we should be prepared with armaments of modern structure. Surely, the homœopathic law is as old as the days of the sage Varadwaj, but homœopathy must be dressed in a new garb according to the exigency of the situation created by the new sciences in a new age.

The evidence of the progress of homœopathy in this light is manifest in Europe and America. The evolution of homœopathy of a century is evident in those countries; but in India, the progress of scientific homœopathy is so slow that we are

reluctant to admit the truth that it is almost at a stasis. Progressive science wants the theory and practice of medicine to follow it in that pace. The days of atoms are gone. We now deal with electrons, ions, neurons, etc. The fine action of homœopathic corpuscles is displayed in the rapid march of the infinitesimals.

In order to understand the definite action of homœopathic medicines, we must resort to the ionic theory. Professor R. K. Duncan of America thus writes after describing the experiment to find out the action of ions: "So far, we learn that not only a hot wire as well as a candle flame constitute an electric battery, but that these gaseous ions, which pass from the wire to the plate need not necessarily convey both kinds of electricity, but may convey one kind only, that kind being *positive*. At this stage of the experiment, then, and while the wire is still hot, pump out the air within the vessel, which, it must be remembered, has so far been at the pressure of the atmosphere. At first, little change will be noticed in the positive charge upon the metal plate; but as the exhaustion proceeds, at a certain point, depending upon the temperature of the wire, the sign of the electricity upon the plate changes. It is now negative, not positive; and when almost all the air—but not quite all—has been pumped out of the vessel, this negative charge may reach high value.

We learn by this that the gaseous ions comprise particles of two kinds, one carrying positive electricity and the other negative; and we are now in a position to understand why the positive charge on the plate decreased as the temperature rose above a certain point. It was obviously because at a certain temperature negative particles began to be evolved as well as positive, and that flying side by side with the positive particles from the wire to the plate, they tended to neutralize their effect. Thus, a low temperature and a high pressure are favorable to the production of positive ions; and conversely, high temperature and a low pressure are favorable to the production of negative ions.

These negative particles, or ions, owing to the importance they have developed, are given a special name. They are called *corpuscles.*"

As to the speed of the corpuscles, the velocity "is simply prodigious. The speed of the swiftest rifle bullet is insignificant in comparison. Their velocity is not at all constant, for it depends on the electric force with which they are charged, and upon the amount of air left in the vessel; but the corpuscle that does not travel with a speed a thousand times that of the swiftest cannon ball, which is two thousand miles an hour is slow indeed. The only velocity with which the speed of corpuscles can be compared is that of light—186,000 miles a second—and corpuscles have been observed with about half this velocity. In fact, the velocity of a corpuscle, depending on the conditions, may be taken as anywhere from 10,000 to 90,000 miles a second."

We had many occasions to compare negative ions or corpuscles with the homœopathic infinitesimals. The high speed of the corpuscles may also be compared with their rapid action.

As to the size of the corpuscles it can be said that they are "*thousand times smaller than the smallest atom.*" The other fact observed is that "*these particles are all alike in nature and size.* And finally we know that *they constitute an actual part of the forms of matter from which they fly.*"

It can be asked, what relation homœopathy has with these negative ions or corpuscles? The answer is short and decisive. As all the elements of nature contain ionic activity and as from them most of the homœopathic medicines are prepared, therefore the homœopathic medicines owe their vigorous energy to the ionic activity of the elements or their compounds. From non-metals and metals and their compounds all medicines are derived. From Hydrogen having sp. gr. of 1.008 to Uranium with sp. gr. of 239, we have the source of medicine; then how can we ignore their ionic energy when they display the material force.

After all, our so-called vitality is not an immaterial, subtle and psychic force but it is the material energy of ions which constitutes a living body. The ionic force comes from the millions of centrosomes of all structure belonging to animal or plant life. The ions themselves are matters and their force pervade the universe. The so-called ether is a material body and not an immaterial energy as has been supposed by Lord Kelvin.

The outcome of all our present knowledge is that there are infinitesimally small particles which according to their quality and quantity produce various manifestations of force. The action of homœopathic medicines comes within the range of that energy. It comes as a surprise to the gross intellect of the *Lancet* that infinitesimally small particles have any power. In its issue of November 23, the following remarks occur: "We know what infinitesimally small quantities of certain substances will put an end to the great vital processes and we know also how endless appears to be the action of the enzymes or ferments which render food assimilable so that the same vital processes are sustained. A thirtieth part of a grain of aconitine will kill the human organism, one part of an enzyme will transform 100,000 parts of cane sugar into invert sugar, the enzyme of malt will convert a thousand times of its weight of starch into sugar, and so forth. Nor is the enormous action of infinitesimally small quantities confined to the organic or organised world. Even certain materials devoid of life are found to exert a similar action. Platinum, for example, in the colloidal state is capable of decomposing 1,000,000 times its weight of hydrogen peroxide into water and oxygen and then of remaining as strong and as active as ever. Perhaps the most remarkable fact in connection with the extraordinary 'vitality' of colloidal platinum is that the energies are at once paralysed by such ordinary animal poisons as prussic acid, corrosive sublimate, or sulphuretted hydrogen. The platinum may thus be said to be poisoned and such a small quantity as one—millionth of a grain of prussic acid is sufficient to prevent this great transforming power.

To give another example of the decided effect of minute traces of various substances it has been found that certain water organisms are destroyed in water contained in a copper vessel and yet the quantity of copper present is only one part in a thousand million parts of water. Such effects are impressive and they are calculated to impress us still more when we contemplate the number of processes going on in the human machine which are dependent upon the action of small things. The great processes of oxidation depend upon small things; the small amount of iron in the hæmoglobin probably controls its great oxygen-carrying property. The minute amount of arsenic and iodine in the thyroid gland probably plays a role of great importance; the enzymes are mighty and the atom also."

Our contemporary of the old school has been gradually conforming his ideas to the infinitesimal power. Like him, some of his colleagues believed the law of *Similia Similibus*. They could not find their way to understand the infinitesimal doses. Now, it has so happened that many of them can understand both the principles. They avow their faith in them but hesitate to practise the homœopathic system.

The *Lancet* yet adheres to atoms. To conceive ions is a great leap for him. We have hope that gross conceptions will give way to refined ideas.

Last of all, it is desirable to enter into the question of vital principle. Lord Kelvin said: "That modern biologists are coming once more to a firm acceptance of something, and that is—a vital principle." Sir E. Ray Lankester wrote in the *Times*, May 17th, 1903, as follows:

"Lastly, with reference to Lord Kelvin's statement that 'modern biologists are coming once more to a firm acceptance of something—and that is a vital principle. I will not venture to doubt that Lord Kelvin has such persons among his acquaintance. On the other hand, I feel some confidence in stating that a more extensive acquaintance with modern biologists would have led Lord Kelvin to perceive that those whom

he cites are but a trifling percentage of the whole. I do not myself know of any one of admitted leadership among modern biologists who is showing signs of 'coming to a belief in the existence of a vital principle.'

Biologists were, not many years ago, so terribly hampered by these hypothetical entities—'vitality,' 'vital spirits,' 'anima animans,' 'archetypes,' 'vis medicatrix,' 'providential artifice,' and others which I can not now enumerate—that they are very shy of setting any of them up again. Physicists, on the other hand, seem to have got on very well with their problematic entities, their 'atoms' and 'ether,' and 'the sorting demon of Maxwell.' Hence, perhaps, Lord Kelvin offers to us, with a light heart, the hypothesis of a 'vital principle' to smooth over some of our admitted difficulties. On the other hand, we biologists, knowing the paralysing influence of such hypotheses in the past, are as unwilling to have anything to do with 'a vital principle,' even though Lord Kelvin erroneously thinks we are coming to it, as we are to accept other strange 'entities' pressed upon us by other physicists of a modern and singularly adventurous type. Modern biologists (I am glad to be able to affirm) do not accept the hypothesis 'telepathy' advocated by Sir Oliver Lodge, nor that of the intrusions of disembodied spirits pressed upon them by others of the same school.

We biologists take no stock in these mysterious entities. We think it a mere helpful method to be patient and to seek by observation of, and experiment with, the phenomena of growth and development to trace the evolution of life and of living things without the facile and sterile hypothesis of a vital principle? Similarly, we seek by the study of cerebral disease to trace the genesis of the phenomena which are supposed by some physicists who have strayed into biological fields to justify them in announcing the 'discovery' of 'telepathy' and belief in ghosts."

As sciences are advancing in taking up an exact attitude, it will be our duty to place homœopathy among these exact sciences, by abandoning useless and unexact words. We can

not adhere any more to words which do not convey precis meaning.

SUPPURATION.

(Continued from p. 488).

Hydrastis can limit suppuration in bad ulcers and change the fœtid smell of the pus. Offensive ulcers, bed sores and chronic ulcers have been cured by the remedy. At present we are not interested in the nature of the ulcer which requires Hydrastis. The symptom of offensive pus is the only indication in suppuration.

Kali Arsenicosum seems to have many properties of Arsenicum. It has never been used in suppuration. It can be said that in chronic suppuration with emaciation it may prove efficacious. In phagedenic ulcers with deep base and turned up edges it has proved curative.

Kali Bichromicum has the following symptoms: small pustules on roots of nails, spreading over hands and wrist; arm became red and axillary gland suppurated. It has been used in punched out, perforating ulcers on either skin, mucous membrane or bone.

Kali Iodatum is generally considered an anti-syphilitic medicine. In that capacity it may be used in cases of syphilitic suppuration and ulceration.

Lachesis has the following symptoms: *Sore spots become fungoid, dark red to brownish*, with white spots, burning on wiping. *The brownish, red areola about the ulcer became blackish blue.* Old red ulcer scars reopened. Suppuration after a blow, the vesicles and epidermis loosened about them, the open spots were dark red, looking like a flat sponge. Bleeding of ulcers which then became cleaner. Ulcers bleed readily.

Hempel and Arndt remark: "Malignant boils, pustules and ulcers on various parts of the body, with much pain, unhealthy granulations, secretion of thin, bad pus; destruction of the deep seated tissue; bluish-black appearance of the

margin of the sore and of the surrounding tissue; sallow, cachectic appearance of the face; suspicion of syphilitic taint. If on the leg, varicose condition of the limb is often present. Great prostration." Allen has the following: "Tendency to echymosis, to bed sores. Indolent ulcers, with bluish purple color. Carbuncles. Varicose ulcers. Various forms of pustular eruptions, which suppurate and become bluish black." Clarke says: "Ulcer sensitive to least touch. Small ulcers surrounding larger."

The clear indication of Lachesis is in phagedenic sores, either from syphilis or other causes. In traumatic injury it holds a valuable place. Poisoned wounds, leading to gangrene, which count many deaths, may be cured by the instant administration of the medicament. Indeed, Lachesis holds a high place in many cases where grave symptoms appear.

Malandrinum is used in bad effects of vaccination. Any suppuration from that cause may require the use of the medicine. The principal indications are the high fever and the excessive bad appearance of the ulcers. In some kinds of vaccination abscesses form at the end of the infection.

Manganum has suppuration of skin round joints. It is doubtful if it has been used for that purpose.

Mentha Piperita produces sore from every scratch. It is a remedy of unhealthy skins and can be so used like its allies.

Mercurius has the following symptoms: *swelling of the prepuce as if distended with air or water to a blister; swelling with inflamed redness of the inner surface of the prepuce with sensitiveness; in the glans under prepuce, red vesicles, becoming ulcers, with discharge of offensive yellow or white matter, staining the shirt, then the large ulcers bleed, and on touch pain affecting the whole body, they have round margins, everted like raw meat, caseous coat on bases; on fore part and one side vesicles eating deeply and spreading; small white vesicle, which also ooze a fluid;* inflamed swelling in the vagina as if raw and sore; red and shining inflammatory swellings; inflammations ending in exudation and suppuration; cellulitis with lumpiness in any region;

periostitis then necrosis; sufferings worse at night; profuse sweat with no relief; *Mercurius* is rarely indicated when the tongue is dry.

Mercury in many forms has frequently been used to check suppuration. It is also considered applicable in inflammation and ulceration. In actual suppuration it is considered beyond the province of the remedy. On the other hand, it is supposed that if it cannot subside inflammation, the medicine has the power to hasten suppuration. So it seems that Mercury rarely possesses the power to limit the suppurative process. It has been found that by the use of Mercury, inflammations end in exudation and suppuration. It is difficult to decide one way or the other, whether Mercury has the power to limit suppuration when it has taken place? There are so many salts of Mercury and their actions being so much unequal it is not possible that all of them should possess the power to oppose suppuration or limit it. It has been found that Mercurius solubilis or Mercurius vivus has the power in higher dilutions to absorb suppuration, if it has taken place in very small quantity. The effect is manifest in internal abscesses as illiac, psoas, etc. In abscess of the liver the checking influence has also been observed. Hoyne has suggested its use in pyæmia. On the whole, it can be said that Mercurius solubilis or Mercurius vivus can be internally used in abscess even when suppuration has possibly taken place. The analogical fact with regard to the use of Mercurius in hydrocephalus has some bearing on the point. The medicine can absorb the hydrocephalic fluid. It stands to reason that Mercurius can also absorb the serous exudation connected with small collection of pus in an abscess. It is worth a trial to use the medicine when suppuration has come. We are of definite opinion that Mercurius has power to favour absorption.

Clarke says: "Another great feature of *Merc.*, almost constituting a keynote, is the tendency to the formation of pus. In the suppurative stage of small-pox it is specific. Flow of pus, from any orifice calls for *Merc.* Pus forms in cavities in

abscesses, which burn and sting. Discharges are yellow green in colour. ... *Merc.* is a great solvent; it dissolves metals out of their ores and it dissolves living tissues, inducing excessive emaciation. Lowly organised tissues as indurations, exostoses, and some tumours are melted first. Oedema and dropsies are absorbed; rheumatic swellings. If the doses of *Merc.* are large and dropsies disappear rapidly under them, the tissues themselves may disappear also in offensive, rapidly decomposing ulcers. The bones soften so that they will bend. Whilst *Merc.* intensifies the action of the absorbents, it may also paralyse them, hence enlargement of glands, with pricking pains, inflammation, suppuration."

Mezereum has the following symptoms with regard to inflammation and suppuration: Inflammation of a fresh wound (on knee), with burning and with intermittent stitches extending into legs; boils on face, *ulcers on bony protuberance; ulcers covered with thick whitish-yellow scales, under which thick yellow pus collects; itching and burning vesicles around the ulcers;* ulcers, with an areola, sensitive and easily bleeding when removing the linen, which sticks, painful at night; the pus tends to form an adherent scale, under which a quantity of pus collects burning and stinging with inflammation.

Allen has the following remarks: "It produces violent inflammation of all mucous membranes and of the skin; internally the inflammation is characterised by burning, externally by violent itching. In addition, its neuralgias are very marked, they attack principally the face, but occasionally other parts. The periosteum of the jaw and the long bones become the seat of an inflammatory process which is followed by its legitimate results." Clarke says: "*Mez.* affects the long bones more markedly than others, and the least touch is intolerable, but it has, like *Merc.*, a strong affinity for the facial bones and teeth."

Mezereum is more a medicine of the mucous membrane, and the long bones. Inflammation, suppuration or ulceration occur-

ring in them is expected to have marked effect. In syphilitic abscess it has proved efficacious in restraining suppuration.

Muriaticum Acidum is a medicine for unhealthy, putrid, and burning ulcers where there is much suppuration or exudation of thin fœtid pus.

Nitricum Acidum is generally used in syphilitic, carious, and mercurial ulcers; complaints arising from punctured wounds; boil in groin with sticking itching in its indurated part; wounds and ulcers with lancinations as by splinters, or with burning pains (especially when they are touched, and which bleed easily; inflammation and painful sensitiveness of the bones; inflammation, swelling and suppuration of glands; ulceration of bones; ulcers with sanious, sanguineous and corrosive suppuration; caries and necrosis; pains in old scars on change of weather.

Nitric Acid is generally used in syphilitic suppuration and ulceration. Allen suggests its use in ulcers and eruptions which bleed easily when touched.

Paeonia has *painful ulcer, oozing offensive moisture on perineum near anus;* sensitive ulcers on lower part of the body.

Allen has the following clinical note: "Abscess below the coccyx. Obstinate ulcer on the jaw. Ulcer right instep from blistering the foot. Large ulcer on lower part of leg. Ulcer on the breast of an old lady, from an abscess which had never healed."

Allen writes: "One of the symptoms of the proving is this: 'A small ulcer on perinaeum near anus that constantly oozes very offensive moisture; painful for eight days.' This symptom has been expanded by clinical observation, principally Ozanam's, into ulceration in general, ulcers from pressure, as bed sores, and from ill-fitting boots ..... The ulcers are the seat of severe shooting pains."

(*To be continued*).

Meteorological Observations taken at 8 A.M. at the Indian Association for the Cultivation of Science, Calcutta.

For the Month of December, 1907.

Date.	Barometer.	Wind.		Temperature.		Humidity.	Cloud.	Rainfall in inches of past 24 hours.
		Direction.	Velocity per hour in miles.	Maximum.	Minimum.		Proportion.	
1	29·992	E	1·1	82·5	68·5	68	6	*Nil*
2	29·984	N	3·7	82·8	65·5	77	8	,,
3	29·945	N	4·9	79·5	61·2	55	*Nil*	,,
4	29·964	N	2·9	77·0	59·5	67	,,	,,
5	30·006	N	4·2	78·2	59·2	83	,,	,,
6	29·994	N	2·4	79·0	61·0	78	,,	,,
7	29·981	E	1·3	78·5	61·2	71	,,	,,
8	29·967	N	1·5	79·8	64·0	70	5	,,
9	30·038	N E	3·1	81·2	67·0	61	7	,,
10	30·046	E N E	2·4	80·5	67·0	67	7	,,
11	30·095	N E	4·2	81·0	64·0	60	7	,,
12	30·057	N E	4·2	78·0	61·5	83	10	0·12
13	30·028	N	4·1	68·0	58·0	89	*Nil*	0·41
14	30·076	N	2·3	71·5	60·0	89	,,	*Nil*
15	30·024	N	4·5	73·2	58·8	83	,,	,,
16	30·025	N	2·5	73·2	59·2	83	,,	,,
17	30·056	N	2·0	74·0	59·0	73	3	,,
18	30·068	N	2·2	73·5	59·0	72	*Nil*	,,
19	30·012	N	2·6	74·0	58·5	77	,,	,,
20	30·036	N	1·6	74·0	59·0	77	,,	,,
21	30·028	Calm	1·1	74·0	59·0	88	,,	,,
22	30·042	N	2·5	73·8	56·8	88	,,	,,
23	30.100	N	3·9	73·2	59·0	83	,,	,,
24	30·092	Calm	2·5	75·0	59·0	75	,,	,,
25	30·046	E	2·6	76·0	58·8	59	,,	,,
26	30·098	N	1·7	74·8	55·2	69	,,	,,
27	30·044	N	2·5	73·0	57·0	65	,,	,,
28	30·065	N	3·4	73·5	57·2	70	,,	,,
29	30·094	E	3·2	75·8	59·0	72	,,	,,
30	30·054	N	2·2	75·8	59·8	78	,,	,,
31	30·044	N E	2·0	76·0	59·8	68	,,	,,
Mean	30·032	N E	2·7	76·1	60·4	74	2	TOTAL 0·53

Remarks: The mean atmospheric pressure of the month of December was 30·032. It will be seen that the atmospheric

pressure was gradually increasing. In the month of November it had been 29·976. The mean direction of wind was N. E. The mean velocity was 2·7 miles per hour. The mean maximum temperature was 76·1 and the mean minimum 60·4, shewing gradual fall of temperature. The mean difference between them was 15·7 as in the last month. The mean humidity was 74. The total rainfall was 0·53; its absence during the month of November was marked.

The sudden rise of the mortality of cholera in the month of November was a noticeable feature. During the week ending the 30th November it was 143. During the week ending the 7th December it was 119. In the week ending the 14th December it was 116. In the week ending the 21st December it was 51, shewing a sudden decline. In the week ending the 28th December it came down to 40.

Mortality from plague was gradually increasing. During the week ending the 30th November it was 18. In the week ending the 7th December it was 21. In the week ending the 14th December it was 27. In the week ending the 21st December it was 48 and in the week ending the 28th December it was 14.

Deaths from smallpox were shewing slight increase. The lowest mortality was 2 and the highest 6 in a week.

As usual fever counted many deaths. In the week ending the 30th November the mortality was 196. During the week ending the 7th December it was 176. In the week ending the 14th December it was 220. In the week ending the 21st December it came down to 182 and in the week ending the 28th December it was 147.

Deaths from bowel complaints ranged from 89 to 103.

The total number of deaths were 3049. During the four weeks the mortality was 817, 847, 743 and 642. The ratio of deaths during the period was 46·65 per mille.

It will be interesting to take a brief survey of the meteorological occurrences and the mortality of the town of Calcutta during the year 1907.

The mean atmospheric pressure in January was 29·996. In February 29·996. March 29·947. April 29·808. May 29·692. June 29·507. July 29·554. August 29·509. September 29·684. October 29·842. November 29·976, and in December 30·032. The steady decline from January to June, and the gradual increase from July to December are noticeable facts.

The mean direction of wind in January was N. W. February N. E. March E. S. E. April S. S. W. May S. E. June E. S. E. July S. S. E. August S. E. September S. E. October S. S. E. November N. N. E., and in December N. E. The gradual change from the south wind in March to the north wind in November is clearly observed.

The mean velocity of the wind per hour in miles in January was 2·2. February 2·8. March 3·1. April 3·5. May 3·7. June 6·1. July 4·2. August 3·9. September 2·5. October 2. November 1·6, and in December 2·7. The lowest velocity was in November and the highest in June.

The mean maximum temperature in January was 78·3 degrees. February 80·9. March 86·7. April 93·8. May 97·6. June 94·2. July 92·4. August 90·2. September 90·6. October 90·5. November 84, and in December 76·1. The highest mean maximum was in May and the lowest mean maximum in December. We clearly see how the inclination of the sun to the tropics of cancer and capricorn affects the temperature.

The mean minimum temperature in January was 62. February 64·7. March 69·9. April 75·9. May 79·1. June 80. July 80·7. August 80·1. September 79·7. October 79·3. November 68·3, and in December 60·4. The highest mean minimum was in July and the lowest mean minimum was in December. The noticeable fact is that the highest mean maximum happened in May but the highest mean minimum took place in July. The lowest mean maximum and minimum temperatures occurred in December.

The year had scanty rainfall. In January nil. February 0·61 inches. March 3·40. April 1·55. May 4·30. June 17·67.

July 9·03. August 10·08. September 10·43 October 0·47. November nil, and in December 0·53.

The highest mortality from cholera was in January. The highest mortality from plague was in April. The highest mortality from fever was in the month of December.

The ratio of death per thousand population in January was 48·52. February 36·57. March 38·0. April 52·82. May 40·78. June 25·7. July 24·05. August 25·48. September 27·8. October 32·4. November 45·55 and in December 46·65. The highest mortality from all causes was in April and the lowest in July. The mortality gradually rises from August, perhaps, to culminate in the highest figure in April.

EDITOR'S NOTES.

The Institute of St. Petersburg Corporation of Medical Men.

The *Lancet*, December 14, writes:

"The *Novoé Vremya* has an interesting note on the history of the Institute of St. Petersburg Croporation of Medical Men, saying that during the outbreak of scarlet fever and diphtheria 25 years ago this institute was formed with 16 medical men, which number during the 25 years of its existence has been increased to 36. Their duties are to attend professionally the poor of the town afflicted with infectious diseases. In these 25 years these medical men have attended 5,000,000 cases free of charge. The journal closes the notice with a list of the six survivors of the original members."

Russia has given birth to eminent scientific men and women. Mendeleeff may be stated to be the Newton of chemistry. His periodic law has revolutionised chemistry. Metchnikoff famous for his phagocytic theory stands pre-eminent in biology. He is followed by Pavloff whose work on digestion has attained a high fame. Madam Klumpkoff as an astronomer has a wide reputation. Madam Currie of the radium fame is lustrous like the metal of her discovery. Now we hear of the Corporation of Medical Men doing invaluable work for relieving patients during an epidemic, shewing a model to all races of mankind. Even for these grand achievements, Russia is barbarous in the eyes of the rest of Europe. India should follow Russia in the cause of suffering humanity.

The Statue and the Students.

The *British Medical Journal* of December 14, supplies us with the following information:

"We have already expressed our disapproval of the attempts made by some medical students to dethrone the statue of the 'brown dog' at Battersea from its pedestal, and we can only deplore the repetition of an offence against public order on the part of lads who should know better. The magistrate at Bow Street told the students who were brought before him that their proceedings were silly, and we quite agree with him. But sillier still is the fuss made by certain newspapers about the 'rioting' of a handful of boys. Silliest of all is the statue which is the source of the trouble. There are, it is to be presumed, some inhabitants of that cultured suburb, Battersea, who have the grace to be ashamed of a monument which, as was said of a more famous one, 'like some tall bully lifts its head and lies.' It was doubtless intended by the foolish folk who set it up as a defiance of the severe condemnation which the methods of certain antivivisectionist agitators met with from one of the highest public tribunals of this country, and it is a standing provocation to young men naturally high-spirited and proud of the profession which it is the business of these agitators to vilify. We have, however, too much confidence in the good sense of the bulk of medical students to believe that they

look upon the effigy of the 'brown dog,' so far as they are aware of its existence, with any feeling but contempt, and we trust that there will be no more 'rioting.' The thing is not worth the martyrdom of even a small fine. The previous outburst was made the ground of various attacks on the medical profession in the press. The *Daily Graphic*, in a beautiful piece of what Oliver Wendell Homes calls 'bladdery bathos,' said: 'One would have supposed that, far from making the little brown dog an object of attack and ridicule, students with any respect for their profession would have regarded it as a humble creature that gave its life for the benefit of humanity, and would have treated its memory accordingly.' The *Morning Leader* published a letter to the following effect: 'The public have now before them a fine object lesson of the spirit of the men who are now being trained for our future doctors. Can they view with calm equanimity the agitation on the part of medical men for more power over the children, and over the poor of our land, while the students are possessed of the spirit of cruelty which this latest exhibition proves'? Beside these noble sentiments we place the following from the *Daily Chronicle* of December 11th: 'A student who fell or threw himself from the top of a tram was only slightly injured, and the crowd refusing him a passage to the hospital, he was taken to a neighbouring surgery, the people shouting, That's the brown dog's revenge.' The hospital in question appears from the context to have been the Antivivisectionist Hospital, and the action of the crowd who refused the injured man a passage may therefore have been prompted by benevolence. But the fine humanity of the people who shouted 'That's the brown dog's revenge' shows the moral effects of antivivisectionist agitation."

Feeling has been raised to a high pitch in the controversy of of vivisection. The anti-vivisectionists condemn the action of the vivisectionists and the vivisectionists are enraged at the interference of the other party. There may be necessity of vivisection but the occasion is rare. The procedure adopted by the vivisectionists to attach an unusual importance to vivisection is to speak the least a stupid business. The provings of homœopathic medicines and the examination of poisoned dead bodies serve the basis of a system of practical medicine which is far more important than the experiments on living animals. Vivisection cannot reveal the position of man differing from the lower animals in the demonstration of the physiological action of medicines. Comparative physiology may differentiate the action of the organs of the higher and the lower creatures. The successive gradation of man from the lower animals in that respect may be an interesting research but is, perhaps, destined to remain in the dark.

Treatment of Piles.

The *Homœopathic Recorder* of the 15th November has the undermentioned information :

"From a thorough article on piles and their treatment, in this journal we excerpt the part treating of the treatment, which is as follows :

The Homœopathic practitioner is not infrequently called to see a patient with piles, who does not know what to do for pains. A local examination will generally show as the cause that the turgid veins have been pressed through the sphincter and have become strangulated by its contraction, assuming thence a bluish-red appearance. The patient is tormented by an intolerable burning. We should in such a case first of all endeavor to reduce the strangulation, which can be best effected by allowing the patient to bend forward, and while he slowly raises up, the fingers, moistened with oil, should exert a moderate pressure upon the knot, which will then disappear inside the sphincter. There must be no violent means used. After the strangulation has been reduced a cold clyster should be cautiously administered, then a cold sit-bath and a cold ablution of the anus. Internally *Arsenicum* 3 should be given, a remedy which always has a brilliant effect. It should always be prescribed where there are burning pains, whether the knotted veins be inside or outside. *Arsenicum* is also useful as it prevents any gangrene of the strangulated parts. When the knots are turgid with blood, and the attack is accompanied with violent colicky pains *Belladonna* 3 should in addition be given. Inordinate itching of the knots calls for *Nux vom.* 3, also *Sulphur* 6. For checking any bleeding that may arise, *Hamamelis* extract is unexcelled. About ten drops may be taken every half hour or every hour, according to the severity of the case. The extract is said to cure mild cases even by itself, but I have not had any experience to substantiate this. After the application of cold water to the anus, *Hamamelis* cerate should be applied. We may also remark that the burning pains of internal piles are usually entirely removed by a clyster to which twenty drops of the extract have been added. Mucous piles seldom show burning pains. But they cause a troublesome sensation of pressure. In such cases the alternate use of *Carbo vegetabilis* and *Sulphur* is advisable. When there are pronounced suppurative products in the stool, there must have been an inexcusable lack of attention. In this case more than in others the most careful cleanliness is called for. *Hepar sulph.* or *Mercurius* should be given in such a case. Hæmorrhoidal troubles in pregnant women call for *Carbo veg.* 3; Belladonna in alternation with *Arnica* 3; *Collinsonia* may also be required.

So far we have chiefly had in view acute cases. In the chronic stage as a rule the same remedies should be applied, only the doses should be repeated at longer intervals. We would state in addition that in the constipation which almost always attends this trouble

remedies like *Podophyllin* 1, *Plumbum* or *Opium* will generally be required; *Lycopodium* should also be added to the list of remedies on account of the liver which is apt to be affected at the same time. And in conclusion: There should be a careful attention to the mouth. Hæmorrhoidal patients according to the law of polarity usually suffer from carious teeth and a bad odor from the mouth."

Many medicines are applicable according to the circumstance of cases in piles, and it is impossible to compress them in a short space. The medicines suggested are most prominent and they generally serve the useful purpose.

Broncho-Pneumonia.

The *Homœopathic Recorder*, November 15th, says:

"The proper treatment of the primary disease, measles, whooping-cough, diphtheria, common cold or whatever it may be, is the great preventive. Of course, at the head of the list of remedies stands *Antimonium tartaricum*. Its great suggestive symptom is filling up of the chest with inability to clear it. The sub-crepitant rales become smothered by accumulations of phlegm which provoke choking fits and cyanosis, so frequently seen in the aged and in anæmic children. Such individuals are sensitive to cold and may be more or less nauseated. A young mother is now and then mistaken in her child's symptoms. It has broncho-pneumonia, has been annoyed by a severe cough and has been rising sufficiently to admit of fairly good aeration in the lungs; but the cough stops abruptly and the child becomes drowsy. This stopping of the cough and stupidity she misconstrues as improvement. The doctor comes. He observes the cyanosis that is coming on; that the breathing is shallower and more frequent; a pulse previously fast and weak is only a faint but very rapid tremor under his sensitive fingers. He notes at once the lungs are filling up, the blood distributed to the too cool body is becoming more and more impure at every flickering heart-beat; the sleep is only the coma indicative of poisoning of the cerebral centres. In such a situation there are three things indicated, viz: *Antimonium tartaricum*, a steady nerve and persistent good care; these alone give the fighting chance.

My method of dispensing this remedy is to put a powder of the second or third decimal trituration in 3 ounces of water and to give a teaspoonful of the solution according to the condition of the patient.

It is not every case that becomes so much devitalized as those calling for *Tartar emetic*. Often-times the strength holds up fairly well and the cough is effective against the phlegm. Such have not suffered from depraved nutrition to begin with. They are worried down by the severity of the primary infection or have lapsed owing to indifference in treatment and care. They are not cachectic, only decidedly the worse for wear. *Ipecac.* is many times their remedy.

It has no antecedent dyscrasias. The rales are coarser than with *Antimonium tartaricum*, The cough may be spasmodic but keeps the bronchial net-work reasonably clear of the loose mucus. If there be nausea, we have an additional link in the chain of *Ipecac.* symptoms. *Sambucus* relieves spasmodic suffocative coughs, especially if the spasms are nocturnal. The cough is accompanied by rough sibilant wheezings and dyspnœa. It would seem to be indicated when the inflammation is just invading the pulmonary capillaries. My personal experience gives me great confidence in this remedy. I administer the tincture in water. *Squilla*, like *Bryonia*, has a cough with pleurisy-like pains in the side. There is dyspnœa, which, with the side-stitches, is developed by inspiration. Often indicated in the lingering and threatening bronchitis of measles. *Lycopodium* in lingering cases that do not tend to clear up, with a muco-purulent matter coughed up or, when in sub-acute cases there is fear of tuberculosis becoming engrafted, it is sometimes very effective. *Sanguinaria* should be also considered in such types. Of course good old *Bryonia* has an invitation now and then to help us out, but the stages of this drug are usually passed before the real lobular invasion develops. The same is true of *Ferrum phosphoricum*. But if a new lung territory becomes invaded it will probably be necessary to turn back to them. *Phosphorus*, which is so apt to have a 'stage' in lobar pneumonia, may also be indicated by incessant cough, scanty secretion when the pulmonic catarrh is predominating over the bronchial. Percussion brings out the dull sound and inspection detects the shallow rapid breathing. The blood-streaked mucus which results from the stripping off of bronchial epithelium by severe cough is always inquired about, but this symptom that is not possible in those who do not expectorate, is never obtainable in infants. It is possible for *Arsenicum*, *Rhus* and some of the other remedies that fringe on the border line of fever and the typhoid state, which sometimes gets to be the condition in protracted cases in elderly people, to be indicated. *Kali carbonicum* is an old person's remedy with its shivers and sticking pains through the chest. It is one of the 'old reliables.' I have sometimes referred to *Kali carbonicum* and *Senega* as the old man's bronchial friends."

The suggestion of Dr HINSDALE about *Ant. Tart.* is true to the point. The choking of the capillary tubes is not only due to the ineffective energy of the child but it is also the effect of the paralysis of the bronchial muscles. When there is resolution of the fine crepitation, then *Ipecac.* comes to our help. *Bryonia* is also of great service in facilitating the resolution when the use of *Ant. Tart.* is not urgent. *Squilla* in wheezing dyspnœa is necessary. *Phosphorus* is a medicine when capillary tubes are more or less affected. Other medicines are to be administered according to necessity.

Facial Neuralgia.

The *Homœopathic Recorder*, of the 15th November supplies us with the following notes of Dr. P. Jousset:

"In facial neuralgia there are two different forms, namely, the ordinary form, and the extremely painful form, which is connected with twitches and is also called 'tic douloureux' or 'Fothergill's face-ache.

The ordinary form of facial neuralgia calls for *Nux vomica* as the chief remedy. The action of this remedy is pretty sure, where the following symptoms are observed: Pains which follow the course of the upper branch of the trigeminus, and thus have their chief seat in the socket of the eyes and in the frontal region and which return in attacks beginning in the morning, increasing during the day in violence, disappearing in the evening; the pain is almost unendurable. *Nux vomica* in the 12 or even the 30 potency alleviates these attacks more surely than the *Sulphate* of *Quinine*, that is commonly used.

I prescribe six pellets dissolved in 125 grams of water, of which solution one spoonful is taken a full half hour before dinner and another before going to bed. In the journal '*L'Art Medical*' I published a cure of an old man who had a gouty diathesis and was seventy years of age, with whom these attacks had been returning for more than a year, and who had been treated ineffectually with *Quinine* and had also spent some time in the mountains.

Aconite is indicated where the pain appears in the frontal branch of the trigeminus and shows one or more points which are painful on pressure, and also radiates into the temples and the vertex. A peculiar indication for *Aconitum* is the formication which always accompanies the pain and which is alleviated by violent rubbing. If the 6 or the 12 dilution should not suffice we would recommend a trial of the mother tincture (this is of course only permitted to the physician).

Spigelia is used more rarely than the first mentioned remedies. It should be considered when there is a pain in the eye-ball, as if it were being torn out or pressed into the eye-socket. *Belladonna*, *Chamomila* and *Gelsemium* may also be used in the ordinary form of facial pain.

Fothergill's pain of the face, or the tic douloureux, is a dreadful ailment, which offers an obstinate resistance to almost every kind of treatment, and in many cases it is incurable, and the excessive pains drive the patient almost to despair and at times even to suicide. The pains come on suddenly and last for several seconds or even a minute and then disappear again at once and totally. Trousseau and Gills de la Tourete treated these nerve-pains with immense doses of *Opium*; but the one as well as the other confesses that he never made a cure by such a dose. Cutting out the nerve which causes the pain, as a rule, only causes a transient relief of the pains and of the ailment. I myself am able to recommend a less hopeless treatment, which I will illustrate by the following case:

Mrs. X., sixty-eight years of age, spare-built and feeble, was sent to the Hospital of St. Jacques on the 1st of March to complete the cure of her pneumonia. The patient had for some time been suffering from attacks of tic douloureux, which ailment had so far resisted every kind of treatment. The attacks of pain came on when moving the jaws for the purpose of eating or of speaking. It was a penetrating pain, which darted like lightning through the left middle branch of the trigeminus (thus through the region of the cheek and the upper jaw); the patient would at once lay the hand on the painful spot in order to press upon it and would remain immovable in this position. During the attack the muscles of the side affected were in a cramp-like motion. The pains would last but a very brief time, but would return every day from ten to fifteen times.

On the 27th of March I prescribed for the patient *Thuja* 6 which remedy was given for four days. The consequence was a very considerable alleviation in the attacks. *Coccus cacti* 6 given for two days, remained without effect. On April 2, *Thuja* 3 was given, after which the attacks disappeared within four days. Two days later a relapse set in. After some doses of *Coccus cacti* 3 in the trituration, the attacks returned only two or three times a day, and in a much slighter degree. On the 12th of April the patient received again *Thuja* 3, on taking which, after four days, the attacks disappeared and did not return again. Nevertheless, the remedy was continued till April 26. The patient seemed to be cured, but on May 30 a slight relapse appeared which, however, disappeared quickly after renewing the *Thuja*.

We need not expect that we may cure all these cases with *Thuja* or with any one remedy. Only too often the ailment will resist every remedy, even the excision of the nerve. Still the example adduced is an encouragement and a proof that in treating this ailment we should never despair and not lightly pass on it the judgment of incurability.

Dr. Tessier, Sen. has cured several cases of tic douloureux with *Thuja* and *Coccus cacti* in alternation, and I myself can recount a number of such cure with the same remedies. Dr. Escalier has published in the *'L'Art Medical'* cases of tic douloureux which had resisted the excission of nerve, but were cured with *Thuja*.

The pains in *Thuja* are very lancinating, following the course of the nerve, and often accompanied with reflectory contractions of the muscular fibres. These phenomena appear especially in the face, cramp-like pains, violent contractions and sharp stitches in the upper jaw, in the cheek-bone, in the teeth, a sensation of interior cold, a sudden redness in the face, with attacks of pain and convulsive motions of the upper lip. The pains set up in the open air, from walking, and more rarely from touching.

Coccus cacti has less application in the treatment of tic douloureux than *Thuja*. It is indicated when the pain starts from the incisors or the eye-teeth. The pains are pressive with lancinations, are worse

in the evening, in the warmth of the bed, and are accompanied with a rush of blood to the head and with salivation.

Thuja and *Coccus cacti* are not, however, the only remedies which have been successfully used in tic douloureux. *Mezereum* (3.—6.) has also done good services, when the pains appear with great severity in the cheek-bone on one side, and when they spread like lightning to the temples, the ear, the teeth and the gums and are aggravated by chewing, talking and by the slightest touch. The following case shows a brilliant result from *Mezereum*:

Mrs. X., fifty-six years of age, else in good health, has been suffering for several years from tic douloureux. The pains were situated in the right middle branch of the trigeminus, and radiated to the temple. The quick darting pain, which only appeared in attacks, was called forth by the motion of the jaw for eating and especially for speaking. On entering the hospital, the patient was seized with such an attack even without any motion of the jaw: she would alleviate the pains by constant pressure, which she exerted almost unconsciously with her hand on the part affected. She came to the hospital on November 5. She first received some doses of *Methylin*, after which the attacks appeared at somewhat longer intervals; but beginning with November 12 she received *Mezereum* 6 in the dilution every day ten drops. This remedy had been selected on account of aggravation from eating and was continued till November 23, and caused a noticeable improvement in the condition of the patient. On November 27th I prescribed ten drops a day of the 3 attenuation, this was given up to December 9, and caused a further improvement. From the 17th of December on, the patient received the 12 and the 30 attenuation of the remedy, and under the influence of these weak doses the condition of the patient improved so much that she could leave the hospital as cured on the 31st of December.

Phosphorus (6 and 12) influences chiefly those pains which are aggravated by eating and by speaking. I have had such patients, who would rather starve than eat and who were improved by taking *Phospshorus*. Also *Atropinum sulphuricum* in low triturations and *Strychninum Sulphuricum* which so frequently act favorably on the pain from atrophy of the spinal marrow, may also be used, as well as *Cuprum* and *Zincum*".

Cromwell Relics.

The *Lancet*, December, 14, writes the curious fact with regard to identification of the body of Cromwell thus :

"What became of Cromwell? is the title of an article by Professor Churton Collins which appeared in 1881 in the *Gentleman's Magazine*. The question is a vexed one. According to an ancient tradition Cromwell's body was conveyed away immediately after his death in obedience to his last orders, and was buried on Naseby Field 'where he had obtained the greatest victory and glory.' According to another account, Mary, Lady Fauconberg, Cromwell's daughter was able to convey the body away from its grave in the Abbey and to have it buried in her husband's house of Newburgh in Yorkshire, where the tomb, an impenetrable marble one is still shown. Another corpse was substituted for Cromwell's in the Abbey and it was this nameless corpse which underwent the indignities put upon it in January, 1661, when the putative body was hanged on the gallows at Tyburn together with Ireton's and Bradshaw's, while the head was set on a pole above Westminster Hall. This head, still transfixed by a spike which was let through the cranium by means of a specially drilled hole, is now in the possession of Mr. Horace Wilkinson of Sevenoaks. It is the head, curiously enough, of some one whose body has probably been embalmed, for the top of the skull has been sawn off in order, presumably, to admit of the removal of the brains. The body to which this head belonged was buried under the gallows of Tyburn, unless, which is probable, the Fauconbergs obtained the body there and carried it off. Death-masks of Cromwell might throw some light on the question of the identity of the head. One of these was in the Museum of the Royal College of Surgeons of England a century ago. It is described by William Clift as 'an undoubted cast of the face of Oliver Cromwell.' It was presumably a death-mask. Another such is, according to Waylen, in the possession of the Rev. Thomas Cromwell, rector of Michel Dean, Gloucestershire. It may be mentioned that the measurements of the Sevenoaks head are said to correspond with those of extant likenesses and busts of the Protector."

CLINICAL RECORD.

Foreign.

A CASE OF DIARRHŒA TREATED BY VACCINIUM MYRTILLUS.

BY ALEX. H. CROUCHER, M.D. & C.M. ED., F.R.C.S. ED.

THE *Vaccinieæ* form one of the Sub-Orders of the *Ericaceæ*, or Heath Order.

There are *Vaccinium myrtillus* (the bilberry), *V. vitis-idœa* (the red whortleberry), *V. uliginosum* (the black whortleberry). For a description of the characteristics and medical properties of *V. myrtillus* I cannot do better than to quote from Dr. Fernie's Book, "Herbal Simples."

He says: "This fruit, which belongs to the cranberry order of plants, grows abundantly throughout England in heathy and mountainous districts. The small branched shrub bears globular, wax-like flowers and black berries, which are covered, when quite fresh, with a grey bloom. In the West of England they are popularly called 'whorts,' and they ripen about the time of St. James's Feast, July 25th. Other names for the fruit are blueberry, bulberry, hurtleberry, and huckleberry. The little windberry has been acquired from its growing on whins or heaths; and bilberry signifies dark-coloured, whence, likewise, comes black-wort, as distinguished in its aspect from cowberry, or cranberry. By a corruption the original word myrtleberry has suffered change of its initial M into W (whortleberry). In the Middle Ages the myrtleberry was used in medicine and cookery, to which berry the whortleberry bears a strong resemblance. It is agreeable to the taste and may be made into tarts, but proves mawkish unless mixed with some more acid fruit.

"The bilberry (*V. myrtillus*) is an admirable astringent, and should be included as such among the domestic medicines of the housewife. If some good brandy be poured over two handfuls of the fruit in a bottle, this will make an extract which continually improves by being kept.

"Obstinate diarrhœa may be cured by giving doses of a tablespoonful of this extract taken with a wineglassful of warm water, and repeated at intervals of two hours whilst needed, even for the more severe cases of dysenteric diarrhœa. The berries contain chemically much tannin. . . . They are also called in some counties bleaberries, huckleberries, and blackhearts."

Some few years ago I read an article in the *Lancet* on the treatment of diarrhœa by *Myrtillus*, and at the time procured a liquid extract, but did not make use of it until on this occasion.

The *Medical Annual*, 1893, states that Dr. Wintemitz used huckleberries (bilberries) in treating Leucopalkia buccalis and other diseases of the mouth, pharyngeal cavity, and tonsils. He treated cases successfully which had existed for weeks and months under other treatment; he used the berries as a gargle, and prefers a concentrated decoction.

The *Medical Annual*, 1904, mentions that Dr. Bernstein found that the bilberry fruit, in the form of an infusion, extract, syrup, or jam, is an astringent and anti-fermentative.

A decoction of the dried berries, the weight of the liquid being equal to the material employed, killed the *Bacillus typhosus* within twenty-four to forty-eight hours while the *B. coli communis* succumbed within twenty-four hours. The berries are non-poisonous, have a pleasant, fragrant taste, and can be readily mixed with mineral water, tea, milk, custard, or cream. Their action is not interfered with by the acid stomach or alkaline intestine. In typhoid fever, by preventing fermentation, they will reduce the risks of perforation. He finds the bilberry very useful in chronic dysentery. Corporal W. P., aged 22, 2nd Royal Sussex Regiment, was admitted into the Leaf Homœopathic Cottage Hospital on August 8, 1907, in a very grave condition, suffering from great pain and dyspnœa. Temperature 102·4F., pulse 120, respiration 39, intense anæmia, distension of the whole thorax and abdomen, especially the right side. The apex beat of the heart was in the fourth interspace anterior axillary line.

The patient went to Crete three years ago, and was there for one year; he was then in Malta for one and a half years; there he had fever; he came home in January, 1907, and was admitted into the Belfast Hospital for suspected duodenal ulcer. There was no history of dysentery. While in the hospital at Belfast hepatic abscess was later thought to be present, and exploratory punctures were made, with negative results. After being there some weeks he was sent home on furlough.

On the afternoon of the patient's admission I explored the right lobe of the liver with a long needle in the mid-axillary line and found pink pus.

The pus having been located, it was decided to open into the abscess cavity. On the same evening, therefore, at 9 p.m., I resected a

portion of the ninth rib in the posterior axillary line, and then again finding pus to be present, by means of a hypodermic needle, I opened the abscess cavity and evacuated about four pints of the usual pink-coloured pus that occurs in a tropical abscess.

The patient's condition before the operation was decidedly bad, and we feared a fatal termination. After the operation, however, he improved greatly and the pain was much relieved.

After many ups and downs the patient got on splendidly and was discharged to the military authorities in an almost well condition on October 28.

However, I do not intend to dwell on the surgical aspect of the case, as it is to the remedial effects of the *V. myrtillus* in an obstinate diarrhœa that occurred during the course of his convalescence I wish to draw attention.

On August 27, diarrhœa set in and gradually became severe; the stools were of a liquid, pea-soupy character, sometimes blood-stained, slimy, the odour was offensive. The number of stools in each twenty-four hours varied from two to eight. Diet and medicines had no effect.

The medicines given were *china, arsen. alb., merc. cor., podophyllum,* &c.; the patient also had colonic irrigation of *argyrol* 1 per cent.

On October 10, liquid extract of *V. myrtillus* was given in 30 drop doses in half a wineglassful of water every four hours. From the commencement of taking this medicine the stools gradually improved, losing their liquid character and becoming formed and natural by October 15, and on October 28, patient was discharged. He has visited the matron of the hospital since his discharge and is doing quite well.

Patient's weight on October 14, was 8 st. 1 lb., and on October 28, 8 st. 8 lb. 15 oz. On November 16, the weight had increased to 9 st. 2½ lb.—The *British Homœopathic Review,* January, 1908.

A CASE OF COLD.

Reported by Dr. Newbery.

Colocynth Case.—H. S., aged 22, a fine looking young man, was first seen at his own house, when he gave the following history.

Some five or six years ago he was laid up with "pain in the stomach." After this he was well until about two years ago, when he was again laid up, the doctor whom he saw telling him he had

"inflammation." Between this time and when he was first seen he had had several attacks of similar pain, necessitating his knocking off work.

On March 15th he was in bed, manifestly in great pain in the abdomen, from which he had been suffering without intermission for about three weeks. There was great tenderness but no particular distension, no tympanitis, and no rise in temperatures.

When first taken ill he went to see a doctor, and on leaving him, the pain was so intense that he had to be taken home in a cab. The bowels were moved freely but no diarrhoea. Tongue coated, whitish. Patient was taken in, put on milk diet, and given *colocynth* 3 mij., 3h.

The pain left almost immediately, and in a few days he was able to take solid food and was discharged perfectly well in less than a fortnight.

NOTE.—*Griping* pain, so characteristic of the physiological action of *colocynth*, was the indication for the remedy.—The *British Homœopathic Review*, December, 1907.

HAHNEMANN HOSPITAL, BRISTOL.

MELANCHOLIA: RECOVERY UNDER PLUMBUM AND NUX.

Reported by Dr. J. Hervey Bodman.

J. W., aged 45, coal-miner, first seen May 17, 1907, at his home. About seven years ago he had been home for a week or two on account of rheumatism, and on going back to the pit was told that they could not take him on again, and this was a great shock to him. It caused a "shuddering, trembling feeling" which "went to the stomach" (epigastric region), and with it a feeling of "darkness and depression" came over him. This trembling and depression increased and persisted, and it seemed to him as though everyone was against him. If he went out of doors he thought everyone was looking at him, and this made him very averse to going out. After a time he got work again, but could not continue at it on account of the extreme restlessness and depression. For the last four or five years he has done no work. He stays at home and either paces restlessly about or lies huddled upon a couch; he gets very little sleep, and will not go out of doors. Refuses to believe that anything can do him any good. His face wears an expression of abject despair. As regards his physical condition nothing abnormal was noted. Prescribed *plumb. met.* 6, *t.d.*

June 21. Attended as out-patient. Much better the last week; has been able to rest and to sit down quietly. Has also been able to go out of doors without feeling that everyone was looking at him. Repeat.

July 5.—The improvement in his mental condition is maintained. Tongue flabby and furred. Bowels constipated. *Nux v.* 6, *t.d.*

July 19.—Decidedly better. Repeat.

August 2.—Continues to improve. Sleeps fairly well. Bowels still rather constipated. *Plumb. met.* 6, *t.d.*

August 16.—Still constipated. Otherwise better. *Ac.phos.* 6, *t.d.*

August 30.—Started work in a quarry two days ago. The depression has quite passed away. *Strych. phos.* 3x, *t.d.*

September 13.—Is now doing harder work than ever before.

He has continued in full work ever since, and without any return of depression.

Remarks.—The change in this patient from abject misery and uselessness of several years' duration to cheerfulness and full wage-earning capacity was most striking, and he was only just over three months in passing from the one condition to the other. As he was not removed from his home and no change was made in his environment or manner of life, it seems reasonable to attribute the change to the remedies administered. The marked improvement during the first seven weeks, during which time he took nothing but *plumb. met.* 6, seems to indicate that most of the benefit should be attributed to this remedy.—The *British Homœopathic Review*, January 1908.

A CHARACTERISTIC SYMPTOM OF ASARUM EUROPEUM.

BY E. M. HALE, M.D.

(142) *Scanty, yellow mucus stool in one string (Materia Medica, Pura*, vol. i., p. 173).

A woman, two months after confinement, from which she made a slow recovery, having had profuse and prolonged lochia, followed by tenacious leucorrhœa, applied for a prescription for "dysentery," saying that she had stool of mucus with pains in the belly. She took *mercurius* and *pulsatilla*, each a few days, but without benefit. I now insisted upon a more definite description of the stool, and was shown one of three or four which had occurred that day. It was a *long, yellow, twisted string of inodorous mucus.* Three doses of

asarum 2d cured the cases. She had but three or four such stools after the first dose.

A woman, four months after confinement, complained of pain in the region of the descending colon, with fæcal discharges coated with mucus. *Podophyllum* 2d was given. In three days no fæcal discharges occurred, nothing but *long, yellow tenacious strings of mucus* (inodorous). Six pellets of *asarum* 3d, after each stool, arrested them in two days.

A second attack occurring in the same lady after a cold, three months after, was cured promptly with *asarum* in the same doses.

These three cases are quite sufficient to establish the reliability of this symptom as a "characteristic" of *asarum*. Was it only a coincidence that they occurred after a severe confinement? or does the intimate relation which *asarum* holds to the generative organs have anything to do with the condition cured? It is notable that the *tenacious yellow leucorrhœa* in Case 1 disappeared with the intesinal blenorrhœa.

It may be well here to compare this symptom of *asarum* with similar ones belonging to other remedies.

Ammonium muriaticum has "discharge of glairy, tough, mucus with stool" (the peculiar *shape* of the *asarum* stool is wanting).

Dulcamara.—"White mucous diarrhœa" (not sufficiently definite to be a good indication).

Graphites.—(1) "Knotty stool," the lumps being united by mucus threads; even after the stool is expelled there is yet some mucus about the rectum. (2) Stool of the size of lumbricus. (3) A quantity of white mucus is expelled with stool. (4) Reddish mucus is expelled with stool. Each of the four symptoms differ from the *asarum* symptom. Did the stool in No. 2 consist of a string of mucus, or was it fæcal matter?

Hamamelis.—"Natural stools covered with mucus."

Podophyllum.—(1) Muco-gelatinous stools, preceded by severe griping and nausea. (2) Dark yellow mucus, which smells like carrion. (3) Stools coated with shreds of yellow mucus. (Although having a close similarity there is sufficient difference observable between these and the *asarum* symptom; the mucus stool caused by *asarum* is *inodorous*, that of *podophyllum* nearly always fœtid. Symptom (1) has a gelatinous appearance, and (2) is mixed with fæces.)

Colchicum.—"Frequent evacuations of *transparent*, jelly-like mucus, relieving the colic." (This resembles the gelatinous mucus of *podophyllum.*)

Copaiva.—"White diarrhœic stools in the morning." (I have cured several cases of intestinal catarrh, in which the *white* mucus stools occurred in the morning; the mucus is not in "one string," as in *asarum*, but comes away in larger masses, and is not as tenacious.)

Other remedies might be mentioned, but enough have been cited to illustrate the importance of individualising each case and selecting the medicine, not from a vague pathological indication, but from its peculiar or characteristic symptom, resembling most closely the characteristic symptom of the disease. It matters not whether that symptom be objective or subjective, if the drug-symptom and the disease-symptom correspond we shall have a rapid and briliant cure. —The *British Homœopathic Review*, January, 1908.

Gleanings from Contemporary Literature.

SOME OF THE NEWER METHODS OF URINALYSIS AND THEIR CLINICAL IMPORTANCE.

JAMES C. TODD, M.D.,

Associate Professor of Pathology, Medical Department, University of Denver; Pathologist to Mercy, St. Anthony's and Denver City and County Hospitals, Denver.

In my talk this evening, I do not wish to magnify the importance of the laboratory in medicine. The laboratory cannot of itself make diagnoses, nor directly indicate treatment, but is only one of the several links. It is, however, an indispensable link, if we regard diagnosis in its true meaning of "knowing all the way through," and not merely of giving a name to a disease. For this laboratory and clinical methods cannot be separated.

Although my subject is "Some of the Newer Methods of Urinalysis," I have been governed, in selecting the methods of which I shall speak, less by their novelty than by other considerations. I have tried to keep in view the object of these talks as it is stated in your printed announcement: ". . . a series of demonstrations and talks upon methods of examination which have proved their practical importance. . . . and which should be more widely applied to the study of cases by all members of the medical profession." What I shall say is, therefore, for the practitioner, rather than for the laboratory man.

At the start it is probably worth while to say a word about

PRESERVATION OF THE URINE.

This subject has not received the attention which it deserves. Every physician has frequent occasion to keep urine several days before examination; and, as is well known, a satisfactory examination is impossible after decomposition has begun.

Undoubtedly the best preservative is boracic acid, about five grains to four ounces of urine. This raises the specific gravity one or two points, but does not interfere with the chemical tests nor the microscopical examination. Boracic acid is most conveniently used in the form of five grain tablets; but tablets containing sugar milk should of course be avoided. Ogden not long ago made a series of experiments with all the ordinary preservatives, including boracic acid, formalin, salicylic acid, benzoic acid, mercuric chloride, chloroform, chloral, camphor and thymol. He found formalin—one drop to four ounces—to be quite as efficient a preservative as boracic acid, preserving urine unchanged from three days to three weeks, according to the character of the urine. There is, however, danger of using too much formalin. When added in proportion of one drop to one ounce, it will reduce Fehling's solution and give Heller's test for albumin; and is likely to cause a precipitate which greatly interferes

with the microscopical examination. None of the other preservatives which Ogden tried, delayed decomposition so long as boracic acid and formalin, and most of them interfered with the subsequent examination.

The "Pancreatic Reaction."

One of the most interesting of the newer methods is that devised by Cammidge in conjunction with Mayo Robson for the diognosis of acute pancreatitis—the so-called "pancreatic reaction."

The original method was described in 1904. There were certain disturbing factors which, in many cases, rendered the results confusing and untrustworthy. Cammidge has therefore improved and simplified the method; and has recently published details of the improved technique, together with the results of 100 consecutive urinary examinations.

The method is tedious, but no one of its steps is difficult. It consists essentially in boiling the urine with hydrochloric acid treating with tri-basic lead acetate, and applying the phenylhydrazin test. In well-marked cases of pancreatic inflammation, a precipitate of yellow, flexible, hair-like crystals occurs within a few hours. These crystals are evidently a compound of phenylhydrazin with some unfermentable carbohydrate, derived by the boiling with hydrochloric acid from some antecedent substance, which, as a result of metabolic disturbances, is excreted in pancreatitis. Cammidge is uncertain as to its exact nature.

His results with the improved method are very encouraging. In the vast majority of cases, operation and the later history have confirmed his conclusions based upon the urine examinations. Very little has been done by other workers. Should further clinical observation confirm the claims which have been made for it, this is certain to be a very important addition to our methods of diagnosis.

In connection with the pancreatic reaction, I should like to demonstrate the

Phenylhydrazin Test for Sugar.

It has long been known that phenylhydrazin in combination with certain carbohydrates, forms characteristic crystalline compounds. Von Jacksch first applied this fact to clinical work.

The phenylhydrazin test is the court of last appeal in the recognition of sugar in the urine. It is at once the most sensitive and the most reliable of our clinical tests, excepting, perhaps, polarization with the best instruments. Stern gives its limit of reliability as 0·05 per cent. of glucose, while the copper and bismuth tests are reliable only to 0·3 per cent. It is capable of detecting the traces of sugar in normal urine (McEwen). It does not distinguish between the different sugars which may be found in the urine, but they can be distinguished by determining the melting points of the crystals.

As ordinarily applied, the test is rather too cumbersome for routine clinical work; hence it has not found favor with physicians generally. When applied, however, by the method suggested by Kowarsky in 1899,

it is very simple and requires little more time than Haines' or Fehling's tests.

Kowarsky's method is as follows: In a test tube he takes 5 drops pure phenylhydrazin, 10 drops glacial acetic acid, and 1. c. c. saturated solution table salt. This forms a crudy mass. Two or three cubic centimeters of the urine are added, and the mixture boiled for at least two minutes. It is then set aside to cool slowly. In the presence of any considerable amount of sugar, a yellow precipitate appears within a few minutes; when traces only are present, it may not appear for a few hours. Under a low power of the microscope the sediment is seen to consist of yellow, needle-like crystals, arranged in sheaves and rosettes. Unless these characteristic crystals are found, the test is negative.

Kowarsky's modification is not so sensitive as the original method and will not detect sugar in normal urine. Although many sugars are capable of forming similar crystals, yet, in practice, the test reacts only to glucose and levulose. Levulose is an unimportant fallacy.

Acetone Bodies.

The occurrence of acetone in the urine in many gastro-intestinal disturbances, in fever, and especially, in diabetes has long been recognized. Within the past few years acetonuria has assumed renewed importance, particularly to the surgical portion of the profession, because of the recognition of its frequent association with a serious, and often fatal toxemia following anesthesia.

Under the name of acetone bodies are included three closely related substances: Acetone, diacetic acid and beta-oxybutyric acid. Acetone results from decomposition of diacetic acid and diacetic acid in turn from oxybutyric acid by a process of oxidation. The origin of oxybutyric acid is not definitely known, although it is generally believed that its principal, if not its only source within the body, is in some complex metabolic disturbance with abnormal destruction of fats. When the derangement is mild, acetone only appears in the urine; as it becomes more marked, diacetic acid also appears; and when severe, beta-oxybutyric acid is added. The three substances appearing in the urine in this order thus indicate an increasing disability of the body to carry on its metabolic processes.

Whenever acids are produced in the body—or are introduced from without—in sufficient quantity to lower the alkalinity of the blood, the symptoms of acid intoxication appear. The condition is probably due chiefly to acidosis in general, not to the specific action of any one acid, since the symptoms have been produced in animals by introduction of various acids, both organic and mineral. Diacetic and beta-oxybutyric acids, are, however, the most common and important of the acids producing acid intoxication as a clinical condition; and the experiments of Wilbur tend to show that beta-oxybutyric acid has a similar, though less toxic effect even when neutralized.

The most significant clinical sign of acid intoxication is the presence of acetone in the urine. Acetone is harmless in itself, and often occurs in the urine unassociated with any symptoms; but its presence is evidence of some metabolic derangement with production of acetone bodies, which, if the oxidative and excretory functions of the body cannot meet the demand, will have serious consequences.

The frequency and importance of acetonuria in diabetes is so well known that I shall not speak of it, except to say that frequent examinations of the urine for acetone yield a better idea of the progress of the disease than do examinations for sugar. Nor shall I more than mention the occasional occurrence of acid intoxication as an apparently independent condition. Here intestinal poisons probably cause the metabolic disturbance which results in over production of acids. Such cases offer decided difficulties in diagnosis, which would probably be impossible without detection of acetone or diacetic acid in the urine.

The recent widespread revival of interest in acetonuria is due to a constantly increasing number of reports of delayed poisoning from anesthetics always accompanied by acetone in the urine. The idea that the poisonous effect of an anesthetic is over as soon as the patient has regained consciousness is being discarded.

Since 1890, occasional deaths ascribed to the late effect of anesthetics have been reported. In general, the autopsies revealed only extensive fatty degeneration, particularly marked in the liver. Some of these cases, even as late as 1903, were reported as acute yellow atrophy of the liver occurring as a sequel to operation or anesthenia. It is only within the past three years that a relationship between such cases and acetonuria has become well recognized. The comparative frequency of an exactly similar toxic condition occurring independently of anesthenia, especially in children, is also attracting attention. In 1904, Brackett, Stone and Low reported in detail a remarkable series of cases observed within a period of five months in the Boston children's Hospital. These cases more than any others, have stimulated observation along this line. Seven of the patients in their series developed alarming symptoms 12 to 48 hours after operation, and three died. The similarity of the symptoms was suggestive: "Vomiting associated with collapse; weak, rapid pulse; absence of fever until just before death; cyanosis causing extreme dyspnea in the fatal cases; apathy and stupor, alternating with restlessness at first, but in fatal cases deepening into coma and death; and the presence of acetone on the breath and in the urine." Diacetic acid was also present in the urine. The anesthetic was ether in every case; and the operations were nearly all trivial, most of them being tenotemies. In six cases of Brackett, Stone and Low's series, exactly similar symptoms came on without operation, generally within two days after admission to the hospital; but these cases were milder, and only one death occurred. Autopsies in all the fatal cases showed extensive fatty changes, especially in the liver. All of these patients were children; most of them were nervous, frighten-

ed, or homesick; and all of the fatal cases had extensive muscular atrophy. The amount of acetone and diacetic acid in the urine bore no relation to the severity of the symptoms.

Similar cases have been described in this country by Brewer, Kelly, Hubbard, Bevan and Favill, and others.

Lewis Beesly has studied a considerable number of cases in the Royal Hospital for Sick Children, Edinburgh, and concludes that, while symptoms may develop after operation without pre-existing acetonuria, yet they are much more apt to appear and are more severe, if the urine contains acetone before operation. He does not, however, regard long continued acetonuria, such as occurs in diabetes, as so ominous as acute acetonuria, such as often occurs in gastro-intestinal disturbances, notably appendicitis, and in uterine fibromatosis. He finds chloroform much more dangerous than ether. Of 19 cases of acute perforating appendicitis with acute acetonuria operated upon under chloroform, 14 died with symptoms of acid intoxication. Of 24 exactly similar cases operated upon under ether, five developed symptoms but none of them died. To all cases in which trouble from this source is anticipated, he now gives 15 grains of sodium bicarbonate t.i.d. for eight days previous to operation, with very satisfactory results.

I think we can sum up the practical importance of acetonuria as shown by these and other recent clinical observations as follows:

(1) The clinical similarity of diabetic coma, delayed poisoning from anesthetics, and the so-called cryptogenic acid intoxication seems to indicate their origin in a similar metabolic disturbance. Mild grades give no toxic symptoms; severe grades are accompanied by very grave symptoms and generally terminate fatally.

(2) Whether the condition is due to the presence of diacetic and beta-oxybutyric acids in the blood, as is probable or to other toxic products, its most trustworthy clinical sign is the presence of acetone or diacetic or both in the urine.

(3) This obscure metabolic disturbance can be induced by anesthetics, particularly chloroform, and also, but to a less degree, by fright and other mental disturbances, gastro-intestinal toxemia, and other causes not understood.

(4) Persons with acetonuria but no toxic symptoms are already suffering from it in mild degree, and are much more likely than others to be precipitated into a dangerous state of acid intoxication. They are therefore unfavorable subjects for anesthesia; particularly so when the acetonuria is not of long standing. Acute gastro-intestinal disturbances are often accompanied by acute acetonuria, hence the relative frequency of acid intoxication following operations for appendicitis.

(5) The ocurrence of this condition is much more common than the paucity of reported cases would indicate. The symptoms have been variously attributed to delayed shock, sepsis, etc. This was well illustrated

in the discussion of Bevan and Favill's paper at the Portland meeting of the American Medical Association. Each one who entered into the discussion recalled similar cases in his own experience.

Tests for acetone and diacetic acid should be made a matter of routine in urinary examinations, particularly in cases of diabetes and in surgical cases. There is no good clinical test for beta-oxybutyric acid; but since acetone and diacetic acid always precede and accompany it in the urine, a test for it is unnecessary in practice. It is essential that urine to be tested for these substances be fresh.

Probably the simplest and best clinical test for diacetic acid is the well-known Gerhardt test. This was used by most of those who have observed diaceturia after anesthesia. A new test—really an improvement upon an old one—has lately been published by Lindemann. He acidifies about 10 c. c. of the urine with five drops 30 per cent. acetic acid, and adds five drops Lugol's solution, and about two c. c. of chloroform. The chloroform does not change color if diacetic be present, but turns red in its absence. He claims this test to be more reliable than Gerhardt's, in that drugs will not give it; and in a series of comparative tests he has found it much more sensitive.

The tests for acetone in general use are Legal's and Lieben's, and with these you are probably familiar. Neither is entirely satisfactory. The physician wants a test which is reliable and reasonably sensitive without distillation of the urine, which is easy to apply, and which gives an easily recognized end reaction. The tests recently proposed by Frommer and by Lange seem to meet these requirements.

Frommer alkalinizes about 10 c. c. of the urine with two or three c. c. of 40 per cent. caustic solution, adds 10 or 12 drops or 10 per cent. alcoholic solution of salicylous acid, and heats the upper portion nearly to the boiling point. In the presence of acetone a purplish-red color appears in the heated portion. This test is very satisfactory in practice.

Lange's test is a modification of Legal's, but is more sensitive and gives a sharper end reaction. To a small quantity of urine is added about one-twentieth its volume (one drop for each one c. c.) of glacial acetic acid, and a few drops of fresh concentrated aqueous solution of sodium nitro-prussid. A little strong ammonia is then run gently upon its surface. If acetone be present, a purple ring will form within a few minutes at the junction of the two fluids.

I mention Lange's method for the benefit of those who prefer the "ring" tests. The ring method of applying tests has deservedly become very popular. Probably the best device for this purpose is the "horismoscope," which has been widely advertised, and with which you are no doubt familiar. Personally, I consider a conical glass, one side of which is painted black, part white, to be every whit as satisfactory, besides being less expensive and much less easily broken. By inclining the glass, the second fluid can easily be run in upon the surface of the first by means of a medicine dropper so as to form a sharp line of contact. Boston's pipette

method, which seems to be widely used, is open to serious objections. Pedersen has recently suggested the use of a long medicine dropper in place of Boston's open pipette, and this is a distinct advantage. The fluid which is to form the upper layer is drawn into the dropper to its full capacity. Half of this is then forced out and the other fluid drawn in. The bubble between the two fluids will rise to the top, leaving a sharp line of contact. The insurmountable objection to this method is the small diameter of the column of fluid, the ring being less distinct than with a greater thickness. When the ring is white, as in the case of albumin, it should be viewed against a black background. For colored rings, I find that nothing brings them out so clearly as to view them against a sheet of thin white paper held toward the light.

Ehrlich's Diazo Reaction.

While this test is by no means new, having been published twenty-five years ago, yet more has been written upon it within the past few years than upon any other urinary test. That is my reason for discussing it here. Considering its simplicity and the vast amount of evidence as to its value which has accumulated, it is remarkable that the average well-informed practitioner knows very little of it, and rarely or never uses it in his practice.

The reaction depends upon the presence in the urine of a substance—the so-called "diazo substance"—which, when treated with diazo-benzol-sulphonic acid and ammonia, produces a characteristic red color. After twenty-five years of study, the exact nature of the substance is still unknown. It is certainly not the result of intestinal putrefaction, and bears no relation to indican; nor does it depend upon fever, as its presence in many a febrile cases shows. It is not driven off boiling; in fact the reaction becomes more marked as the urine is concentrated.

To use it intelligently, the physician should realize that it is an empirical test. It has been met with in a considerable number of diseases, and therefore cannot be claimed to be pathognomonic of anything. It is only an important symptom. Its clinical usefulness is practically limited to the diagnosis of typhoid fever, the prognosis of pulmonary tuberculosis, and the differential diagnosis of measles. Among several hundred diazo tests this winter, I have found a distinct reaction only in these three diseases. In one case of suspected typhoid a doubtfully positive reaction was obtained, and the case afterward proved to be one of pancreatic abscess. It is a safe rule to regard all doubtful reactions as negative.

Typhoid fever. While the diazo reaction is not so closely indentified with the disease as is the Widal reaction, yet the simplicity of the test makes it even more widely useful. It can easily be made a matter of routine by every physician. Hastings states that "the reaction is held to-day of equal importance with the Widal test and urine cultures in Ehrlich's laboratory at Frankfort."

A positive reaction can be obtained in nearly every case of typhoid fever during the second week at least. Combining the statistics of seventeen observers, I find 2,621 cases of typhoid, of which 2,266 or over 86 per cent. gave a positive reaction. The lowest percentage was 52 per cent.; the highest a little over 97 per cent. These percentages, however, do not at all accurately represent the real number of cases showing the reaction. They are much too low because a very large number of the examinations were made late in the disease, and even during convalescence. Billings, in a report of the work done with the diazo in conjunction with the widal reaction by the New York Department of Health, concludes that the diazo is even more constantly present than the Widal, and that in the majority of cases it appears 48 hours earlier. A negative reaction, therefore, is almost positive proof that the disease in question is not typhoid, provided, of course, that the test is not made too late in its course.

The reaction is generally stronger in typhoid than in any other disease; hence as Cummins has shown, if the urine be highly diluted the reaction of other diseases is prevented, and a positive reaction becomes much more strongly suggestive of typhoid. He finds that with a dilution of 1 :150 the reaction is practically pathognomonic of typhoid. This, however, is of less value than would appear, because many cases of typhoid will not respond at anything like that dilution. Personally, I have tried the dilutions in only a few cases of undoubted typhoid, but have not been able to obtain a positive reaction in greater dilution than 1 : 30. The discrepancy is probably to be explained by the fact that typhoid in this region does not compare in severity with that in Philadelphia where Cummins did his work.

Ordinarily, the reaction appears about the fourth or fifth day of the disease, although it is sometimes delayed. In contrast to the Widal reaction, it begins to fade about the end of the second week, and soon after entirely disappears. An early disappearance is generally a favorable sign. It reappears during a relapse, and thus aids in distinguishing a relapse from a complication, in which it does not reappear.

Tuberculosis. Recent work upon the diazo has been directed chiefly to a study of its significance in pulmonary tuberculosis. It is rarely found in mild cases, except during some acute complication. This is a suggestive point. In all of Budden's six cases of pneumonia and bronchitis with a positive diazo, an underlying tuberculosis was afterward discovered. It is probable that in many cases in which the reaction is unexpectedly positive, an unrecognized tuberculosis also exists.

After it once appears, it persists more or less intermittently until death. While an occasional patient showing the reaction may recover, Michælis has put the average length of life as six months after its appearance. Most observers agree with him. Widstrand, who examined 2,000 urines from 204 consumptives, found a constant reaction in 37 of the 40 cases which died in the hospital. In his mild cases it was absent. Holmgren, from a study of the records of 158 cases, concludes that, following a strong

reaction the average length of life is about six to eight weeks; while with distinct but not strong reaction the maximum is 18 months.

Apparently about 10 per cent. of grave cases do not show the reaction (Wood), but it is possible that some at least of such cases have been tested during intermissions. The reaction is often intermittent, and is known to fade before death, generally the day before. Urine obtianed from the bladder after death does not give it (Budden).

The conclusion is apparently inevitable that the diazo reaction is an extremely important sign in the prognosis of pulmonary tuberculosis. The only view to the contrary seems to be that which Budden and some others express. Budden agrees that practically all the cases which give the reaction die, but holds that "these are precisely the cases in which the grave prognosis would be evident from the history and the clinical signs. Even if this were invariably true, it is certain that the reaction would furnish the clinician a simple means of confirming his opinion. We must recognize, however, that a large proportion of physicians are not well versed in chest examinations; and also that, in addition to those cases the prognosis of which is evident from the physical signs, there are undoubtedly other cases in which the presence of a marked diazo reaction indicates the gravity of the situation at a time when the physical signs are apparently insignificant. Simon in his "Clinical Diagnosis" says that, personally he regards "the outlook as very bad in those cases in which the reaction is almost constantly present, even if the physical signs are but little pronounced." In his excellent article in the American Journal of the Medical Sciences, Arneill corroborates this from his own cases, and gives a striking illustration in the case of a man who came to the hospital with a diagnosis of dyspepsia. The diazo reaction was marked. There were very slight signs of infiltration at the right apex, but eleven days afterward tubercle bacilli were found in the sputum, and later in the feces. The patient died six weeks after admission, the diazo being almost constantly present during the time.

Wood suggests that the reaction be used in deciding whether consumptives can be benefited by a change of climate. While of course it would often be misleading if considered apart from the physical signs—as no laboratory examination ever should be considered—yet we cannot doubt that if it alone were relied upon, fewer hopeless cases would be sent West with the certainty of dying away from home and friends.

Measles. From the records of a number of observers, only about 20 per cent. of cases fail to show the reaction. It generally appears before the eruption and remains about five days. In the cases I have examined, it was never absent when the test was made before the fourth day of the eruption, and was never present after the fifth day. It does not appear in German measles, and is therefore useful in differential diagnosis.

I think we are warranted in summing up the aid which the diazo reaction offers to the practitioner as follows:

(1) It is of great value in differential diagnosis of typhoid fever, generally appearing earlier than the Widal reaction and being nearly as constantly present. It can therefore be said to be "negatively pathognomonic." When obtained in high dilution, it has great positive diagnostic value. Its disappearance at the beginning of the third week indicates a mild case. Its reappearance points to a relapse rather than to a complication.

(2) It is a valuable and practicable aid in the prognosis of phthisis, particularly to those who are not skilled in examinations of the chest; and it may be the first indication of a fatal prognosis in an occasional case with very meagre physical signs.

(3) The reaction is useful in distinguishing between measles and German measles.

(4) Its presence in any disease not in the list of those generally producing it, particularly pneumonia, bronchitis and tonsilitis, should lead to suspicion of an underlying tuberculosis.

Certain drugs are said to interfere with or prevent the reaction. Among these are creosote, tannic acid and its compounds, opium and its alkaloids, salol, carbolic acid, and the iodides, some of which are frequently administered in typhoid and tuberculosis. They probably act upon the reagents used in the tests, rather than upon the diazo substance itself.

Technique. While the test is really very simple, it is not possible to emphasize too strongly the importance of careful attention to technique. The early investigators were very lax in this regard. Many of them found the reaction in normal urine, and in all sorts of diseases. Undoubtedly, faulty technique and failure to record the stage of the disease in which the tests were made have been responsible for the bulk of the conflicting results reported.

The reagents required are:

(a) Staturated solution sulphanilic acid in five per cent. hydrochloric acid.

(b) 0·5 per cent. aqueous solution sodium nitrite.

(c) Stronger ammonia.

One part of the sodium nitrite solution is added to 40 parts of the sulphanilic acid solution. Equal parts of the test solution thus prepared and of the urine are mixed in a test tube, and a small amount of ammonia is poured upon the surface. If the reaction be positive a bright red ring will appear at the junction of the mixture and the ammonia; and upon shaking a distinct pink or red color will be imparted to the foam.

If the test is to have any value, the following precautions must be observed:

(1) The reagents must be accurately made.

(2) They must be fresh. It is a good plan to make the sulphanilic acid solution once a month, and the sodium nitrite solution once a week. Older solutions will often give good results but it is not safe to depend upon them.

(3) Tho solutions must be mixed in the proportion of one part of (a) to not less than forty of (b). Greene mixed them in proportion of one to 100, and claims that thereby some of the other diseases are excluded, and the reaction has more value as a sign of typhoid. Personally, I prefer the proportions generally adopted, one to forty, because Greene's method might exclude also some cases of typhoid which give a weak reaction. Much the better way to exclude other conditions is to make the test with diluted urine.

(4) The urine must be fresh, not more than 24 hours old. Urines several weeks old sometimes give the reaction, but others lose it within a short time.

(5) Due account must be taken of the concentration of the urine. A positive reaction can sometimes be brought out in a dilute urine by boiling until concentrated.

(6) Probably the most important source of error is in wrongly interpreting the color. The test must be performed by daylight. Many workers have considered only the color of the ring at the junction of the ammonia and the urine. A positive reaction gives a pure red ring without a trace of yellow, but rings of various shades sometimes closely approaching the red are frequently encountered and easily cause confusion. The essential feature is the color of the foam. This varies with the intensity of the reaction from an eosin pink to a deep crimson; but it is imperative that it be pink or red, not orange. I am in the habit of thoroughly shaking before the ammonia is added, and of pouring the ammonia upon the foam. The pink color instantly appears in the portion of the foam which the ammonia has reached, and is readily seen by contrast. This does not interfere with production of the red ring at the under surface of the ammonia.

Russo's Reaction.

In 1905 Russo published a test which he claims gives parallel results with Ehrlich's diazo reaction, and has certain distinct advantages, particularly in simplicity of technique and stability of the solution employed. His tests in a large number of diseases show an almost invariable parallelism between the two reactions. The test consists merely in the addition of four or five drops of a one to 1,000 aqueous solution of methylene blue to four or five c. c. of the urine. If it be positive, the urine turns emerald or mint green upon shaking; if negative, blue or greenish-blue.

The new test has attracted very little attention in this country. I can find only a few short notes and abstracts in our journals. A number of articles have however, appeared in English, German and French journals.

Rolleston has compared the methylene blue reaction with the diazo in 54 cases of typhoid, and finds that the former is more constantly present, appears earlier, persists longer, and more frequently reappears during a relapse. He has also obtained positive reactions in 18 out of 20 cases of measles, and in several cases of scarlet fever, pneumonia, diphtheria and

some other conditions. He believes that the diagnostic value of the reaction is similar, but not superior to that of the diazo.

R. Dunger reports examinations of 1,100 urines by both these methods. He did not find any marked parallelism, but rather the opposite in a fairly large percentage of the cases. He concludes that Russo's reaction has no diagnostic value; but that, as had already been claimed by Cousin and Costa, and Gandy in France, it is simply a physical phenomenon due to admixture of a blue fluid with a yellow urine.

Within the past few months, I have applied the two tests to urines from more than 200 patients, representing over thirty pathological conditions. While a certain parallelism was evident, in that Russo's reaction was never negative when the diazo was positive, yet it was positive twice as frequently and in a much greater variety of conditions than the diazo. I am convinced that the test has no value, and that mixture of colors explains the whole phenomenon. I never obtained a reaction in a pale urine. When urines which gave both it and the diazo reaction were diluted to a light amber color they lost the methylene blue reaction but gave the diazo with only slightly diminished intensity. A deep amber urine which gave both reactions, was compared with a pale amber normal urine. When the darker was diluted to the same shade as the other, both gave a negative methylene blue reaction with the same shade of blue. When, upon the other hand, the lighter urine was brought to the color of the darker by addition of a little urine heavily charged with bile pigment, then the two urines gave a strongly positive reaction with the same shade of green. That the small amount of jaundiced urine did not in itself produce the reaction was demonstrated by mixing it with water in the same or greater proportion, and obtaining a negative reaction.

I have mentioned Russo's reaction chiefly to show how easy it is to be led astray by new and, especially, empirical methods.—*Medical Times*, October, 1907.

Acknowledgments.

The British Homœopathic Review, January, 1908, London.
The Homœopathic World, January, 1908, London.
L'Art Medical, January, 1908, Paris.
Allgemeine Homöopathische Zeitung, 26th December, 1907, Leipzig.
Ἰατρικὴ Πρόοδος *os.*), December, 1, 15, 1907, Syra (Greece).
La Grèce Medicale, December, 1, 15, 1907, Syra (Greece).
The New England Medical Gazette, January, 1908, Boston.
The Homœopathic Recorder, November, 1907, Lancaster, Pa.
Homœopathic Envoy, December, 1907, Lancaster, Pa.
Medical Times, January, 1908, New York.
Journal of the British Homœopathic Society, October, 1907, London.
The Indian Homœopathic Review, October, 1907, Calcutta.
Annaes de Mediciena Homœopathica, September, 1907, Rio de Janeiro.
The North American Journal of Homœopathy, January, 1908, New York.
Medical Advance, December, 1907, Chicago.
Revista de Farmacia, October 1907, Barcelona, Spain.
Revista Homoepathica do Parana, October, 1907, Curityba, Parana, Brazil.
La clinique, December, 1907, Paris.
New York State Journal of Medicine, December, 1907, *Brooklyn.*
Le Mois Medico-chirurgical, January, 1908, *Paris.*

PUBLICATIONS BY DR. SIRCAR.

THIRD EDITION, REVISED AND CONSIDERABLY ENLARGED.

THERAPEUTICS OF PLAGUE

BY

MAHENDRA LAL SIRCAR, C.I.E., M.D., D.L.

Price 1 Rupee. (1s. 4d.)

We warmly commend Dr. Sircar's work as the most complete one which we have on this interesting and fatal disease, and one which is well worth study.—*Monthly Homœopathic Review*, Aug. 1, 1903.

Taken altogether, Dr. Sircar's pamphlet must be considered the most valuable work extant on the treatment of Plague.—*Homœopathic World*, Sept. 1, 1903.

CONFERENCES UPON HOMŒOPATHY by Dr. Jousset; an Essay on the CHOICE OF HOMŒOPATHIC REMEDIES by M. Gallavardin.—Translated from the French—by Mahendra Lál Sircár, M. D.—Price 8 Annas.

"A very good translation. These conferences form an interesting and fair exhibit of the leading doctrines connected with the development of Homœopathy. There is also a translation of Dr. Gallavardin's," &c.—*Monthly Homœopathic Review* (London).

ON THE PHYSIOLOGICAL BASIS OF PSYCHOLOGY. BY Mahendra Lál Sircár, M. D.—Price 8 Annas.

THE CALCUTTA JOURNAL OF MEDICINE: A Monthly Record of the Medical and Auxiliary Sciences.—Edited by Mahendra Lál Sircár, M.D.

Volumes 2 to 8, and 10 to 22, may be had for Rs. 5 a Volume. Vol. 9 not published.

"We have now a well edited representative in the far East; and we feel sure it is one destined to advance the knowledge of Homœopathy, to increase the appreciation of its merit."—*Monthly Homœopathic Review* (London).

"Our best wishes attend the new Journal and its editor, and we venture to assure him of the deep interest which all his American colleagues will take in his enterprise."—*United States Medical and Surgical Journal.*

HAHNEMANN, THE FATHER OF SCIENTIFIC MEDICINE: Being the Presidential Address, delivered at the 133rd Anniversary of the birth of Hahnemann, held at the Albert Hall, on the 10th April, 1888. By Mahendra Lal Sircar, M.D.—Price 4 Annas.

MORAL INFLUENCE OF PHYSICAL SCIENCE: Being the Substance of a Lecture, delivered at the Town Hall, on January 7, 1891, under the Presidency of His Honour the Lieutentant-Governor. By Mahendra Lal Sircar, M. D.—Price 4 Annas.

Th[illegible]1, *Sankaritola*, CALCUTTA.

PUBLISHED MONTHLY.

THE CALCUTTA JOURNAL OF MEDICINE.

THE Journal will be conducted on strictly Catholic principles.

The object is simply and solely the advancement of medical science, and the diffusion of sound knowledge of the laws and conditions of health.

The *Similia Similibus Curantur* law and the infinitesimal posology of Hahnemann will be recognized as the most advanced points yet reached in the domain of therapeutics.

Nevertheless, full and fair play will be allowed to all the systems of medicine in vogue in the world, and in fact to whatever can be shown to have succeeded in effecting a true cure, or at least in affording relief to suffering where established means had failed. Preference will always be given to simpler means and ways, and thorough contempt shown to secrecy and mystery, the essence of quackery. Thus, cases under the *Kavirâj* and the *Hakim*, and even under persons ignorant of the profession, will be admitted, provided they are genuine and authentic, and reported faithfully and in detail, by competent authorities. But cases of cures, however brilliant, brought about by secret remedies, will meet with no favour.

The auxiliary and cognate sciences—whatever, in fact, has any bearing, direct or indirect, on Life and Health, will have a due share in the Journal.

An attempt had been made to publish, in *deva-nágara* character, the most approved Hindoo Works on Medicine, with translations of them into English. It was found to be extremely difficult to rescue from oblivion the valuable records of experience of the ancient physicians of India, so justly celebrated for their powers of acute observation. This part of the undertaking is, so difficult, that no positive assurance was given of its regular appearance.

The Journal will consist of 44 pages Octavo, but will be increased in size in proportion to the amount of professional support and public patronage we meet with, upon which alone, it is needless to say, the success of the undertaking will entirely depend, and for which the Editor earnestly prays.

Subscriptions to be forwarded and communications addressed to

AMRITA LAL SIRCAR, L.M.S., F.C.S.,
51, *Sankaritola, Calcutta.*

Subscription Rs. 10 (14*s.*) *in advance; Rs.* 12 *in arrears.*
(Post Free.)