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ORIGINAL ARTICLES.

*THE PROPERTIES AND MEDICINAL USES OF SHILAJATU

By

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In discussing the properties and medicinal uses of Shilajatu it will not be quite out of place to mention the sources from which I derived the hints about its action and therapeutics. The late lamented Dr. Hem Chandra Sen, M.D., with the help and co-operation of Mahamahopadhyaya Dr. Gana Nath Sen, M.A., L.M.S., devoted much of his time in investigating the properties and actions of this drug. I also found Dr. G. N. Sen extensively using it, and under his guidance and instructions I acquainted myself with all available literature regarding this drug and have recorded the results after its use for several years. It was tried in all varieties of cases for which it is known to be useful. The number of patients in which I saw it used and from which I recorded my conclusions is over four hundreds.

In the times of चरक Charak and सुश्रुत Sushrut, the ancient Ayurvedic Physicians, Shilajatu was used to be prescribed as रसायन Rasayan—an alterative and restorative, and for achlorhydria and intestinal fermentation.

It is also mentioned in the तन्त्रम Tantram, wherein it is prescribed for increasing the vigour and vitality. But from the times of Buddha, Shilajatu became a favourite drug with the Buddhists who used it as a remedy for various diseases, and thenceforth it is mentioned in every modern book with all its therapeutic actions for which it is used upto the present time.

* Specially contributed to the Antiseptic.

The description and the therapeutic actions of this drug are given in Bhabaprakash, Astangahridayam, and Rasaratnakar, the best and the most authoritative books of the present time.

"It is a mineral extract that exudes from the heated rocks in summer." It is a kind of gum found in the rocks and is intimately mixed with dust and stones which latter make the thing sink in water. The easiest way of removing the impurities is by dissolving the whole thing in water and allowing it to stand for some time. The Shilajatu floats on the top of the water in the form of a scum which is seperated and dried.

Four varieties of Shilajatu are described in वाग्भद Bagbhat,

of golden yellow colour.
of silver white colour.
of copper red colour.
of shiny black colour.
Of these four varieties—

The black coloured one is found in comparatively pure state, easy to bring it to a prescribable form and it is considered to be the best in its therapeutic effects. I have seen this variety used in every case.

This black variety is a tarry looking substance. Shiny, brittle and pulvirizable when inspissated. Bitter and saltish in taste. Has an unpleasant odour of urea. It dissolves in water; but does not dissolve in alcohol, chloroform or ether. It is neutral in reaction. Does not burn. It should never be heated either in the process of purification or in the process of administration. The reason given as one of its chief therapeutic constituent is that urea is reduced to biuret and finally to cyanuric acid, giving off ammonia.

Shilajatu is used by the Kabirajes and the Hakims all over India for the following diseases :—

Diseases :—		*Supposed action :—*
Gall-stone	...	dissolves gall-stone.
Jaundice	...	removes obstruction.
Enlarged spleen	...	reduces the size of spleen.
Fermentative dyspepsia	...	intestinal antiseptic.
Worms	...	,, ,,
Piles	...	useful as a purgative.
Adiposity	...	by increasing metabolism.
Anasarca	...	useful as purgative and diuretic.
Renal stone	...	dissolves renal stone.
Anuria	...	as a diuretic.
Diabetes mellitus	...	diminishing sugar.

Epilepsy	...	nervous sedative.
Hysteria and neurasthenia		,, ,,
Insanity	...	,, ,,

Amenorrhoea, dismenorrhoea and menorrhagia..... special action on female generative organs.

Tuberculosis and leprosy	...	alterative.
Elephantiasis	...	,,
Anorexia	...	,,
Gonorrhoea	...	urinary antiseptic.

I have given above the gist of the information which I collected from the literature of the Kabirajes and the Hakims and I started my investigations on this basis.

The magnitude of the list seemed so puzzling to me that I did not know how and where to begin. Another difficulty arose about the form in which the drug is to be best administered. Both the Hakims and the Kabirajes use it in the form of pills in 10 grain doses. Later on I found that it is best given in mixtures and the unpleasant taste and odour of this drug can best be concealed by the Glyl preparations, especially the Glyl cinnamoni. But these mixtures must be freshly prepared. It is best given alone or mixed with alkalies.

Externally :—Shilajatu probably has no action when applied on the unbroken skin. Being neutral it is not even antacid. On broken skins and ulcers although it produces a slight antiseptic action we have other drugs far better than this.

Skin :—When taken internally, it produces a mild diaphoretic action. It stimulates the action of the glands of the skin and a portion of the drug is eliminated through this path producing a mild antiseptic action. For this combined antiseptic and diaphoretic actions it is used to relieve itching in jaundice.

I have seen three cases where itching was troublesome and which disappeared after the use of Shilajatu for a week.

It is for this mild antiseptic action it is used in leprosy, eczema and other skin affections. The characteristic odour is always obtained from the perspiration of those who use it.

Hypodermically :—It produces no inflammation, causes very little pain and is slowly absorbed. I first injected this under the skin of a rabbit and when I opened the area after a week I found no sign of inflammation or any residue of the drug.

It is useless to use this drug hypodermically in liver or kidney complaints. The only ones where this form of administration seems to be of some use is in nervous cases.

One should use 20% solution of this drug subcutaneously.

Internally.—

Stomach:—As it is neutral in reaction it does neither increase nor inhibit the secretion of the stomach. A portion of it is probably absorbed from the mucous membrane of the stomach.

Liver:—Acts as a hormone in stimulating the liver cells to produce an increased biliary flow. In this respect it acts very much like the dessicated or extract of liver.

I have not had the occasion to observe in a curarised dog or a human being having a biliary fistula to ascertain definitely whether it is due to the increased flow or the complete emptying of the gall-bladder or the hurrying down of bile in the alimentary canal. But from what I could gather from the clinical facts it certainly increases the actual production.

It thins down bile and reduces the inflammation of the biliary passages, mainly by draining, and, to a slight extent, by its antiseptic action.

I have seen it useful in biliary congestion. It is very useful in cholelithiasis as it increases the flow of urine. Much of the cholæmic toxin is eliminated through this path. It also stimulates the flow of bile and thereby thins down and dilutes the inspissated bile of the bile passages. The pressure might remove the stone or the thin bile might escape by the side of the stone and diminish the icterus.

Its usefulness in jaundice is evidenced by the fact that under Shilajatu treatment bile salts in the urine gradually diminish and then disappear. When the medicine was stopped, bile salts again appeared in the urine which again subsided when the patient was brought back under Shilajatu treatment.

The action of Shilajatu on liver also alters its glycogenic function. It is an established fact that in some diabetics it reduces the quantity of sugar at a very fast rate. It is the practice with all Kabirajes that they always prescribe Shilajatu in some form or other in every case of diabeties.

Of those diabetic patients whose urine I examined methodically, I am convinced that in five cases it was difficult to deny the fact that the disappearance of glycosuria was due to Shilajatu treatment.

Respiratory passages:—I could not be convinced of any action of this drug on lungs. It is said to be useful in phthysis but I do not know why.

Circulatory System.—

Heart:—It has very little effect on the heart except secondarily. Shilajatu is nontoxic to the heart muscles for which reason it is so eminently adapted in cases where the weakness of the heart muscle goes hand in hand with the liver or the kidney trouble.

In high-tension it is a specific. It combines the actions of blue pill, the citrates and the iodides. It is admitted on all hands that there is not one drug which is efficient in all cases. Even the nitrites, when continued for a long time, finally fail to reduce the blood-pressure.

As a demonstration of the efficacy of Shilajatu in high blood-pressure, Dr. G. N. Sen kindly showed me a case of apoplexy whose B. P. was reduced from 215 to 135 and was maintained at this low level for over three months and the patient was steadily improving from his hemiplegia.

I am citing below a few cases of high B. P. where Shilajatu treatment proved very successful:—

I. Mr. Basu, Hindu male, aged 43 years, of short stature and stoutly built, voracious eater, had severe epistaxis for three days in August 1917, apoplexy in February 1919, andanother attack in April 1919. B.P. ranging from 185 to 220. Arteries sclerosed, heart dilated, 2nd sound accentuated.

Tried blue pill, citrates, sulphates, iodides, benzoates, hippurates, nitrites, serum of trunecek and guipsine, but B. P. could not be brought down lower than 185.

Under Shilajatu treatment it is only 160 and the patient is steadily improving.

II. Mrs. Sen, Hindu female, aged 35, robust, had constant headache, nausea, anorexia, puffiness of the lids, palpitation and her B. P. 190.

Thialion, Iodalbin, Iodoglidin, and Nitrites were tried. The B.P. could not be brought down lower than 185.

Under Shilajatu treatment headache subsided, all her complaints gone and the B. P. came down and maintained to 140.

III. Mrs. Guha, Hindu female, aged 28, plethoric. Suffering from constant headache, shortness of breath, palpitation, dismenorrhoea and her B. P. was 210. In this case she was so fatty that it was impossible to make out the cardiac area. There was accentuation of the second sound of the heart.

I tried thyroid extract, secretogen, iodides, nitrites and salines but she was no better.

Under Shilajatu treatment with the disappearance of her troubles and complaints the B. P. came down to 160.

IV. Mr. Ghosh, Hindu male, aged 46, of sedantary habits, had a constant headache and loss of appetite in spite of which he was growing fatter. The B. P. was 180, cardiac dullness increased and accentuation of the second sound of the heart.

I tried all sorts of stomachics, intestinal antiseptics, purgatives, iodides, nitrites and salicylates. The B. P. fluctuated together with his complaints but the former never came below 170.

Under Shilajatu treatment it went down to 130 and maintained this low level. The area of the cardiac dullness became almost normal. His complaints disappeared.

Shilajatu acts as a general vasodilator. In dilating the renal arterioles it produces the increased production of urine. In dilating the hepatic arterioles it produces the increased flow of bile. In dilating the systemic peripheral arterioles it produces a general lowering of Blood Pressure in arterio-sclerosis. In dilating the cutaneous arterioles it produces diaphoresis. In cases where the sclerosis of the arteries is not far too advanced the elasticity of the arteries which is lost due to the high blood-pressure comes back when the pressure is brought low by Shilajatu treatment, Consequently the hypertrophy of the heart reduces.

In my plethoric case, where she, much to her relief, steadily lost flesh, I think the stimulating action of Shilajatu on the liver cells produced an active disintegration of Red Blood Corpuscles and a relief of plethora. We shall deal with it more fully when discussing its action on metabolism.

Urinary System :—By repeatedly examining the urine of patients who are under Shilajatu treatment the following facts become evident :—

(1). Quantity of urine in 24 hours increased.
(2). No alteration in reaction.
(3). No change of colour or odour.
(4). Amount of sugar (if present) diminishing.
(5). „ of albumin („) „
(6). Quantity of urea increased.

Kidneys :—As a part of the general vasodilating action of Shilajatu the renal arterioles are also dilated. Whether it stimulates the vasodilator nerves of the kidney or it acts as a hormone, it is difficult to say. The simple osmosis or the selective action of the glomerular epithelium does not fit in this case.

Shilajatu seems to stimulate the uriniferous tubules of the kidney as it is only the watery portion of the elimination that is increased. For this it is useful in reducing the vascular tension in cirrhosis of the kidney. Save and except this mechanical washing, its antiseptic action is hardly brought to play.

As Shilajatu increases the production of urea it should never be given inuric acid calculas.

It is useful in diminishing phosphaturea and phosphatic concretions.

By diaphoresis it mitigates the toxæmia by removing the toxins and the accumulated fluids as of ascites, uræmia, cholæmia and the like.

It is valuable in cases of diabetic albuminuria where both casts and albumin diminish. (Shilajatu is said to be a cure for diabetic amourosis and night-blindness.)

Urinary bladder :—If it has any action on bladder it is that of irrigation, thereby reducing congestion, inflammation and frequency of micturition.

Shilajatu is very serviceable in cases of anuresis where there is no palpable stricture. This is brought about by soothing down the nerves of the reflex path of the action of micturition, especially nerve erigentes.

Metabolism :—We know that Shilajatu reduces weight. It is very good in plethoric conditions ; but how this is brought about is a problem. We know that it is a purgative, diuretic and a diaphoratic. But it surely hits something higher than these ordinary ones, and after observing so many cases under Shilajatu treatment I have an impression that this drug as it rectifies every organ of the body, improving the ones that are degenerating and restraining the action of those that are working excessively, has a stimulating action on the endocrine system of the body, and I think it acts as the internal secretion of liver which on entering the circulation influences the activity of one or more other organs acting co-ordinately through the medium of a nervous system and reacting on body metabolism.

Nervous System :—(The urea in Shilajatu produces the diuretic action and the urates soothe down the nervous system). Like Luminal and Adalin it is a good hypnotic. It has no cumulative action and is non-toxic.

It is used in hysteria, neurasthenia, insomnia, melancholia, mania, cardiac depression, eclampsia, epilepsy, choria, and all other nervous diseases.

I have seen this drug being used in almost all the above affections. I have seen it in some people producing marvellous results, and in those it seems to inhibit the sensibility of the reflex arch.

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* DRUGS AND THEIR PROPER USES

BY

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Before starting directly on the subject, I feel it quite necessary to disclose, or, so to say, in other words remind the old forgotten words which I think ought to be printed in the minds of a physician, prior to his commencement of medical practice.

* Specially contributed to the Antiseptic.

To be a physician, is to hold a more respected and honoured post than a district magistrate, or any other higher capacities. But I am grieved to find that most of my brother practitioners do not remember that they are physicians and must act also as a physician, and should not trespass the jurisdiction of a physician, must create in them the glorious idea of dieing as a physician, to leave behind them the memories of a good physician.

Most of my brothers, in the present day, think it to be a useless task and below their dignity to go through their materia medica (things which are used in the practice of medicine), after they have come out of their colleges and schools. They think generally that they know too much of medicine, and, specially the therapeutical actions of medicine; but, alas! they are quite unjustified in thinking so. They start with the routine method of treating a case, which if it fails to cure their patient, they jump at once over a patent drug and if the same in its turn fails to cure they say—oh! It is hopeless.

But before the eyes of all the Physicians hangs a screen and beyond that lies the vast treasure of medicine, majority of which quite is untried up to now.

In my opinion a good physician is a regular student of medicine and drugs, who keeps an ardent desire to know and learn something new of medicine every day. He should not on any account keep a bar of distinction between the Old and New Schools of treatment, but must remember that his duty lies in curing his patients and that his interests are in alleviating the sufferings of his suffering patient. So if he works out consciously on this basis, he will have less chances of crying out—"oh! this is quite hopeless and beyond cure."

I wish to be excused by all brothers and sisters if I have used anything which may be termed as strong language in my foregoing lines, but I think I am quite justified in doing so.

You will come across in your practice many persons coming to consult you for something, which they wish to disclose in private.

It matters little, your patient may be rich or poor, but will be a young boy or middle aged adult. See that they are shy—keep their eyes always down when they talk with you, they look at you as if they are forced to look at you. Sometimes you may notice few pearly drops of perspiration that appear on their forehead as they talk with you even in privacy. They seem to grasp for breath as they talk, while physically they may appear quite healthy to your eyes. You will also notice that there are bluish rings below the eyes.

Well, they have come for partial impotency. In youth this impotency is generally caused by auto-traumatism while masterbating—while amongst the adults and middle-aged persons, the condition is very frequently the result of excess of venery. They will complain to you about loss of appetite, dyspepsia, nausea after having rich food, constipation, headache, emaciation or wasting of gluteal muscles, fear of mixing in society, listless want of energy to do a little or more of mental work, easily fatigued.

The young boy will be frequently found to be absent from the school.

There is a peculiar dread for the opposite sex, but they will boast much of doing this and that with the other sex before their friends; but in reality they get timid and fear the fair sex, as a goat will fear a tiger.

They will also complain of passing semen which is watery on mere thought or reflexion of a beautiful lady; discharge of semen (Prostatic fluid in majority of cases) while straining during the act of defæcation; frequent complaint of night pollution, making them powerless and helpless in the morning to leave their beds.

With the married persons, often, there will be the complaint of unsatisfied sexual congress; even in some cases, ejaculation of semen before coition, or in some cases penetration impossible.

The shape of the organ is altered to some extent. It is generally narrowed at the root and thicker at the end, slightly twisted to the direction of the hand which the onanist frequently makes use of.

I do not wish to treat such cases of partial impotency, caused by masturbation, drastically by giving some stimulating medicines, like Tr. Nux Vomica, Strychnine, Damiana, or preparation of Phosphorus. By so doing I have noticed more harm than good.

As per my experience with the patients that have come to me I cannot but help recommending one of the East-Indian plants. This plant is abundantly found in India and goes by the name of Ikshugandha (Sans.), Tribulus Terestris-Hygrophia (Latin), Astracantha (Eng.), Tal Makhana (Hindi.)

Now is the great problem of its preparation and administration.

Gather about a pound of the whole tree (Hygrophila Spinosa) including flowers, fruits and seeds, leaves, stems and roots, then pound them well. Take this mass and keep in a big glass jar furnished with a glass cover, pour over this two and a half pounds of absolute alcohol B. P.; cover it tightly and keep in a cool dark place for a period of 20 days remembering to stir the contents every fifth day by a glass rod. On the twenty-first day filter the tincture thus obtained and keep in a glass bottle,

This tincture will remain active for fifteen years without losing in any way the medicinal properties, which is bestowed on it by nature.

Well, I had to change the dose of the medicine according to the general condition of the patient; but in most of the cases I have learned myself to rely on the following.

Rs. Tr. Ikshugandha m. XXX.

Aquapura ad. 3iii

Mice flat-into three doses. Sig-one dose three times a day.

Very lately I have found the efficacy of the above medicine in urinary affection particularly Dysuria, and painful micturition.

I leave the investigation of further therapeutical actions of this valuable remedy in the hands of my deserving friends.

I may tell you somthihg about another great remedy which I have found out during my practice equally as good as Ikshugandha for removing the condition known as impotency of the advancing married adults due to excess of intercourse and masterbation of the young bachelors. This remedy has got much value in improving the functions of the brain cells. It works directly over the white and grey matters of the brain, first of all soothes it, then imparts to it a permanant stimulus and later on over the spinal cord.

Remember that a practical physician has got more value in gold than a theoretical one. You should also bear in your worthy brain that every remedy has got some definite action and requires to be administered when it is therapeutically indicated.

You should not waste your precious time in simply discussing and comparing about the opinions given out by different authorities only—but save your time in practically finding out what will save your patient directly from his troubles, without much thinking and wasting of your energy. This you can learn very well, when you have mastered a definite remedy and know fully well when it is definitely indicated.

The drug which I am to describe now is the most common thing which we come across in our every day house-hold life; that is to say we use it in our diet, but very few have the kindness of knowing it fully and digesting as a physician ought to.

The medical name of this indicated remedy is "Avena Sativa", and commonly known as oatmeal. It has the natural order as Graminea and is found to grow in all places where the climate is temperate. For medicinal purposes, tincture is to be made from the fresh seeds. However, tincture is also made from the plant and the leaves, but it is not so efficacious as the one made out from the seeds alone.

I have myself applied this remedy only to a limited extent and whereever I have used it—there I "*shot the bullet and got the game.*"

I have had good results with this in cases of neurasthenia and nervous prostration in broken-down constitution with a sense of all-gone in them, by giving 30 drops doses three to four times a day; I cannot but recommend and say that "It is a true friend to hard-working students."

I went through persistently with this remedy, noting down the results consciously with a few cases of liquor drinkers, who blessed me after two months as I saved their houses as well as their pockets.

With these persons I ordered them to bring one empty bottle of whisky, which I filled with water and added a drachm of the medicine and advised them to take a wineglassful whenever they felt the craving for the obstinate fluid.

In November 1922 a lady was brought to me by her husband. She was Parsi-aged 27. She was quite healthy and a lovely-looking soul. Her husband was married to her over a year back and since then she has persistently refused to have intercourse with him. He neglected this for a month, then he could not tolerate this and wanted to take her to some Gynaecologist to see if she required some operation. This she consented and further said that she had no desire for the act and she did not like to have it. She was eventually presented to a dozen Physicians and Surgeons without anything that could give satisfaction to the couple. Fortunately they heard of me and came to take my opinion about the case.

Before this I had not the occasion to test and verify the result of this bliss.

I tried with her with complete success in three months—in five drops doses twice a day after meals. She often visits my office, with her baby son when he catches cold or gets fever.

GONORRHŒAL PROBLEM AMONG THE WORKING CLASSES IN INDIA *

By

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Gonorrhoea in India is daily on the spread. The rich and the poor are affected alike, the middle classes are somewhat more free. In India it is known among the Christians as "clap" or "Tripper", among the Hindus as "Palma," and among the Mohamadans as "Lozak."

The attack is more marked in the male with severe symptoms, so that the disease hardly escapes notice. The poor consider it a thing of

* Specially contributed to the Antiseptic.

daily occurrence with even some pride. Boys of seven or eight are now and then found coming for treatment. I have a boy of twelve under treatment for an almost impermeable stricture.

The males among the working classes seem to be the chief factor in spreading the disease. They develop this disease from some stray creature and then pass it on to members of their family consisting usually of two or three wives. During drunkenness they are found coupled with a member of another family. Thus one more is added to the list of victims. This woman with or without her knowledge quickly gives it to her husband and he to his wives and thus the cycle goes on.

In woman this disease is very often extremely mild and may not be noticeable. On the other hand, if symptoms do appear, they are mistaken for "*whites*", a very common disease in the poor due to poverty, drinking and unclean habits. Others are ignorant, not being versed and less interested in genito-urinary diseases, get accustomed to periodic pain and discomfort in the pelvic organs attributing it to symptoms of married life. Again 80 % of all Indian women due to modesty would rather be gnawed to bits than face a male doctor. Others due to fear of their husband's knowing, or for the disgrace they would bring on their husbands, keep quiet. These are the causes I often came across while enquiring the cause of delay in getting treated.

At times this disease is latent in woman for long periods. They suffer from no inconvenience. No signs or symptoms may be found. The question now arises: are such women infectious? Well, in a sense they are, for one out of many connections spread over a considerable period may be infectious. Such women are most infectious during or after periods, or following abortion or labour.

Children are also found among the working classes suffering from gonorrhoea. The cause being beastility on the belief often held (mostly in N. India) that gonorrhoea could only be got rid of by having connection with virgins, the younger the child the surer the sign of virginity. Blindness in children, "blind from birth", is due to Ophthalmia neonatorum. Ophthalmia neonatorum in 75% of the cases is due to direct infection of the eye during birth with fraternal exude or after birth to the infected "*Sari*" which is utilised for wiping the eyes by the mother, or some infected woman visitor.

Another cause of spread of this disease is the latency or "carrier" factor. This is the most important item to be dealt with during its treatment. Most of the cases discharged as cured apply for treatment as "relapses." All Venereologists know what relapse is. They are the cases that are often discharged as cured after "cessation of urethral discharge." "This cessation of urethral discharge" only means that for the *present* the main thorough-fare (the urethra) is clear, but on no account does it mean that all the streets, lanes and alleys are clear. In poor the urethra being flushed with antiseptic reacts quickly and gets rid of the infection, but to push this antiseptic into all side streets, lanes and blind alleys is no easy matter.

The latency factor both in man and woman is due to not completely getting rid of all the organisms from the peri-urethral ducts and glands; and that the organism still being present will flourish any time when they get a suitable niddus. They then multiply and invade once more the main thorough fare the urethra, according to Wansey Bayley. The following are the parts in genito-urinary passage where the gonococcus may lodge waiting for an opportunity.

IN MAN.

(1) Urethral pouches. (3) Compus glands.
(Lacunae of Morgague).
(2) Urethral follicles. (4) Prostate.
(Litter's glands.)
5. Vesicle Semenalis.

IN FEMALE.

(1) Urethral glands. (3) Bartholin's glands.
(Strenis glands)
(2) Urethral follicles. (4) Ducts of Bartholin's glands.
(5) Glands Cervix utere.

Gonorrhoeal Lesions.—

For convenience may be divided into two main groups.

I. Local (Direct spread.)
  (A) In Male.
  (B) In Female.
II. Metastastic (Spread by blood stream.)
I. Local.
  (A) In Male.

During infection the gonococcus invades the anterior urethra and implants on the mucous membrane. Here it quickly multiplies and produces pus. The usual inflammatory process starts, a battle between polymorphonucleus and the gonococcus. Next the organism wanders and becomes intracellular by reaching the sub-epithelial tissue. Here according to one Donagh the organism lives and thrives at the expense of the polymorphonucleus. From here they may enter the blood stream and give rise to metastoses.

LESIONS.

Camperitis:—During this process of invasion, some enter or are pushed into the ducts of compus glands which open into the penile urethra. Thus one of the chief and early complications during the anterior

urethritis is acute camperitis, followed on by abscess formation, but chronic camperitis is very rare. This invasion of gonococcus into compus gland was first demonstrated in the 19th century by Morgagni

Peri-urethral inflammation and abscess:—This infection may spread as above and may cause abscess formation in the following:—

(1.) Lysons glands of frenum.

(2.) Lacunae of Morgagni.

(3.) Litters glands.

(4.) Paru-Urethral ducts.

Balanitis:—The mucous membrane of the foreskin and the glands penis gets swollen, due to the inflammatory process and also due to the accumulation of pus behind the long preface. This balanitis, if not treated, leads on to phemosis and paraphimosis by producing oedema of the skin; if this oedema is not relieved gangrene supervenes.

Prostatitis.—Is one of the common complications in all cases of posterior urethritis usually occurring after the third week. About 80% of all the cases are affected. Most of this knowledge dates back from the days of Sir Henry Thompson's work.

In prostatitis there is often only one to be affected and rarely both. The inflammation of the middle lobe is very annoying and troublesome to surgeons.

Prostatic abscess is due to the spreading of inflammation deep into the glandular substance with the formation of small yellow infiltration foci causing necrosis in molecules or in mass-miliary or a large single abscess.

Epididymitis is due to direct extension of the gonococcus from the urethra (Oppenheim and Low) the chief cause being anything which exacerbates urethritis. It is often found in hospital practice, especially among the working classes, roughly in about 40% of all gonorrhoeal cases. The left side is more often affected that the right, due to the dependent position of the testis, or both may be affected simultaneously, or one testicle after other. Commonly it develops after the third week of urethritis, that being the most usual time for posterior urethritis to develop; but it may occur at any period, from the earliest onset of the disorder onwards.

Warts or Papilloma or Venereal dots are often met with in India in man, about 8% being infected. The frequent sites are the mucous membrane covering the glands penis, especially right round the cornea, and also the irtegument of the penis and scrotum. These warts are due to irritation caused by the pus.

Cystitis.—It appears within a fortnight from the onset of the disease, is always due to carelessness of the medical attendant. It is not so common as it is believed to be. One rarely comes across cystitis in venereal practice. No douot most of the cases diagnosed as cystitis are only cases of acute posterior urethritis. I have not yet seen a genuine case of gonorrhoeal cystitis, nephritis nor pylitis.

(B) IN FEMALE.

As mentioned above the disease is mild in women and hence not noticeable. Germs may lurk in the crypts of the cervix and in its glands, and ducts of Bartholin and being discharged only during intercourse, without any symptoms being present.

The gonococcus being once introduced penetrates the epithelial cells, the less resistant epithelial cells suffer most. The squamous epithelium of the adult vagina is not easily penetrated but the ducts, pari-urethral glands and the glands of Bartholin's offer no resistance at all. The disease spreads along the surface from cell to cell along epithelium lined ducts into mucous crypts, along the urethral and cervical canals into the glands of the cervix and the body of the uterus, along the Fallopian tubes into recently ruptured Gragian follicles and to the peritoneal coverings of the pelvic visera.

LESIONS.

Vulvitis.—Is common in children than in adults. This is explained by the tough character of the epithelium covering the labia. In children this is soft and more easily penetrated. In adults gonorrhoeal vulvitis is usually secondary to lesions higher in the tract and is caused by the presence of continual irritating discharge weakening the epithelium.

Vaginites.—Is common in children as vulvo-vaginites. It is also met with in adults. This rare occurrence is due to immunity possessed by vaginal epithelium for gonococcus infection. This immunity depends on three factors:

(*a*) Gonococcus grows on alkaline media. Vaginal secretion is acid.

(*b*) Vaginal secretions also have bacteriocidal properties.

(*c*) The squamous cells covering the vagina are like those of the skin and not easily penetrated.

In women if vaginitis is found this is due to the presence of long-continued discharge damaging the squamous epithelium which becomes sodden, swollen and thrimmed. In this condition the gonococcus could easily penetrate the tissue and cause the symptoms. In children this epithelium is thinner and less resistant, therefore a primary vaginitis is common.

Again in pregnant women the vaginitis may be primary due to the inflamed condition of the mucous membrane.

Infection of the glands and ducts of Bartholin.—In 80 per cent. of working classes who attend the hospitals, the glands and ducts of Bartholin are infected. These glands are situated on either side of the vulval origin. These are compound racemose glands with a fibrous capsule. Each gland has number of lobules whose acini are lined with columnar epithelium and these lobules are connected with the main duct by small ducts. This main duct opens on this inner side of labium minor above the hymen. From here the gonococcus reaches the main duct and travels up to the gland where at first one lobule is affected but the whole gland may be also affected later. This involvement depends on the individual resistance and whether the infection is purely gonorrhoeal or mixed.

In some cases the recovery is complete, in others suppuration occurs, and in the third the inflammation may cause occulsion of the duct and hence form retention cysts. When the duct is inflamed a small reddened area is seen near the ducts origin and this spot is known as Sanger's "macula gonorrhoica." If well observed this spot is often seen in the working class just after opening the parts.

Urethritis:—Is rarer in women than man. The infection is mostly secondary due to the spread of discharge from the cervix along the vagina to the urethra. If once the urethra is infected it is apt to persist almost indefinitely due to mucous cysts, depressions and the periurethral glands which have wide mouths opening on the floor of the urethra.

GENITAL ORGANS.

Cervicitis is present in 98 per cent. of all the gonorrhoeal cases and is the result of direct infection, especially in women who have borne children and in whom cervical ulcerations are present. In virgins also this infection is very frequent because the covering of the squamous and columnar epithelium around the external os is not often intact, thus favouring cervical infection. The absence of gonorrhoeal organism from cervical swabs is no sign of cure because they may be present or absent. The most likely time when they could be found in the secretion is just after cessation of menstruation, but even here we may fail because the gonococcus may have migrated to subepithelial tissues.

Endometritis is the most frequent cause of abortion and it also aggravates the after result. No definite line could be drawn between cervicitis and endometritis as it is hard to say whether endometritis does exist during cervicitis.

From the uterus the gonococcus travels up to the Fallopian tubes causing bilateral salpingitis in 60 per cent. of the cases. Salpingitis is a very

grave lesion in the females because the ostium of the Fallopian tube opens directly into the peritoneal cavity and inflammation of the tube invariably leads to peritonitis. Hydro and pyosalpingitis may take place. The ovary may also be affected. The perio-opheritis is due to the affection of the surface of the ovary. The inflammation causes the ovary to be fixed to the surrounding structures, the capsule becomes thickened, ovulation is impeded and the follicles are converted into retention cysts. On the other hand, these follicles may rupture, the infecting organisms may enter this wound and gain access to the deeper tissues. The ovary becomes enlarged, oedematous, and not infrequently abscess forms.

METASTATIC LESIONS.

Arthritis according to McDonagh is due to increased acidity of blood caused by the gonococcus. This condition is found in about 2% of all cases of posterior urethritis in male and of cervicitis in females. In arthritis no gonococcus was ever found ; hence the question is, is it metastatic or due to gonotoxin. It is now universally acknowledged to be due to metastatic lesion. This disease in children is often associated with conjunctivitis and in girls with vulvo-vaginitis. Females are more affected than males. It rarely attacks more than one joint—the attack is often sudden and rarely leads to suppuration. The knee joint is mostly affected as shown by Funger. Out of his 376 cases the knee joint had to its credit 136 cases.

Teno-Synovitis occurs in company with arthritis and it is very hard to differentiate this from arthritis. When both arthritis and Teno-Synovitis exist, this is usually known as gonorrhoeal rheumatism.

Next to the joints, the heart is the organ which is affected the most. Aortic valves suffer more than the mitral. The endo-carditis is often, especially the malignant gonococcal endocarditis, diagnosed only after death.

In gonorrhoea there is vast field for the organism to play about and cause havoc. Often patients and doctors are found in utter despair. The cause among the poor being lack of knowledge, poverty and unhygienic condition. Ricord, the great venerologist, on being asked when gonorrhoea is cured, declared "we know when clop begins, but God alone knows when it ends.

CASES AND COMMENTS.

PAROTID FISTULA

By

K. N. PRADHAN, SITA BUILDING, NAGPUR.

S., at the age of 7 was operated on by Dr. N. for a swelling in the region of Socia Parotid for an abscess, how ! the patient's relations cannot describe. Since that time for five years a fistula remained. His relations described that at the time of meals it was pitious to see water running down the cheek and spoiling the clothes. S.'s case was diagnosed by Vaidyas' as Nasur or Bone caries and sinus. For 5 years all sorts of medicines were given internally and locally they were applied without the slightest benefit.

When he was admitted to the Hospital on 19th of January, S. had a small opening in the line of Stenson's duct through which saliva was flowing whenever he was given anything to eat. The opening could hardly admit a sewing-needle point. It was situated at the posterior border of Masseter muscle. It was diagnosed as Parotid fistula.

Operation.—S. was given chloroform and according to standard author's instructions I tried to put in a small wire at the usual opening of the duct inside the mouth. To my surprise I found it impossible to do so, there being hardly any recognisable puncta there. Then the outside opening was transversely enlarged for ½ an inch. A finger was kept inside the mouth at the 2nd molar tooth *i.e.*, at the site of the natural and usual opening. A director was thrust inside through the outer opening, keeping the line of duct strictly in mind. Next a pair of Sinus Forceps were passed through it in the direction trying to pierce the buccinater at right angles to the anterior border of Masseter muscle. A drainage tube without any holes in it was taken up in the Forceps through mouth and cut at the outer end but not flush with the wound. A small hole was made in butt ends of the tube and a thread was tied at the angle of mouth. There was very little haemorrhage and a pad was kept on the cheek and bandaged. For three days the cheek was swollen, patient had evening temperature to 101° and could hardly open his mouth. On the 4th day another and a smaller tube was attached to the thread at the mouth opening and when the old tube was removed this smaller tube automatically was replaced in the same place with much ease. Still the temperature continued and I was afraid of sepsis and general poisoning. So I removed the tube but I had drawn a thick silk ligature through the same opening by repeating the manner and tied it again at the angle of mouth. The temperature and swelling went down in a couple of days. I used to put in Hydrogen Peroxide solution at the skin wound and gave the same for gargles 4 times a day. At the end of a fortnight the patient was sent home with the silk in his mouth, but, alas ! the watery discharge continued. Hoping that it would stop with the closure of the wound the silk was cut, flushed the wound and Benzoin co was applied on a little cotton wool. The patient, since the fever left him used to take the usual vegetarian's spiced diet. He was called after a week but still the water, my nightmare, continued. For 4 weeks in all there was no change ; the thread was cut at the angle of mouth. Then he was put on milk alone without sugar, even fruits were denied to him. When this diet was rigorously kept up for one week then alone the water stopped and the wound closed. Now the patient takes full diet and the wound has completely closed; silk thread came by itself in the mouth. During the milk diet period the external wound was twice touched with pure Carbolic Acid. I think the patient is cured.

Suggestions I.—The drainage tube must have small side holes so that the blood would come out of the bucal wound. II. The patient must be kept on strict milk diet ; no acids no pungent things nor substances which require mastication should be given. III. Never lose hope.

Question—How was the duct restored ? Is it a new duct or by accident following the right anatomical position that I have pierced the natural duct ?

HEXAMINA INTRAVENOUSLY

By

D. M. VASAVADA, ASSISTANT SURGEON, BIKANER.

No drug has come into such wide use for the treatment of the urinary tract as Hexamina since its introduction about 25 years ago under the trade name of Urotropin. Experience has shown that if properly administered to the patient under careful observation it is of value in about 60 p.c. of cases, and is in fact superior to any other drug in common use in the infection of the urinary tract. In common practice this percentage is rarely achieved and daily experience shows that it brings more failures than successes. I for one, having seen indifferent results, prescribed it because I ought to but not with the confidence which a well known drug usually inspires. This was my attitude towards the drug until recently. When however I came to know that it can be given intravenously as well, I set myself about trying it once again. I first tried it in a case of chronic posterior urethritis with some involvement of the prostrate. He was undergoing the usual treatment by massage and irrigation of bladder with some

amelioration of his condition. The first injection, however, accelerated matters—the urine was clearer, the heaviness in the perineum was less and the patient began to feel confidence and entertain hopes of ultimate recovery of which he had despaired. Further injections were continued with increasing benefit and after a dozen injections nothing remained to be done —he was discharged cured clinically.

Since then I have tried this drug in a large number of cases with different conditions in which I thought this drug was indicated. The results were uniformly satisfactory and my confidence in the drug was once more restored.

The conditions in which urotopin is indicated are many and are well-known to most of us. I however would like to summarise some of the conditions in which I have found it useful. The first of these is the infection of the genito-urinary tract either by Gonococci or by any other bacteria. It is valuable in both acute and chronic urethritis and is of special service when the prostrate and the epidydimis are also involved. The indefinite constitutional symptoms such as backache, general lassitude and mental exhaustion which characterise the chronic infection of the prostrate and which many a time are not referred to this focus of injection are more favourably influenced when the drug is introduced in this way, and I believe its greater utility lies in attacking these unapproachable foci. In very chronic cases of prostatitis and epidydimitis I have seen now a days adding Sodium Iodide, grs. 10 in 10 c.c. I have found it a valuable addition when fibrosis due to long chronicity is suspected.

The second group of cases are those of cystitis with infection upto the kidney such as Pyelitis, Bacilluria, etc. It is more powerful in these cases intravenously than when given by mouth. The reason is difficult to state. Probably the explanation is to be found in the fact that it reaches the blood in concentrated form and is also excreted in an equally concentrated form by the kidneys, the liver and the gall-bladder. It is well known that Urotropin in the proportion of 1 in 5000 inhibits the growth of bacteria and some clinicians test the urine to see if this percentage of Formaldehyde into which it is decomposed, is reached. It is possible that by its rapid excretion, it is in a still more concentrated form and it not only inhibits but actually helps to kill the bacteria. Be the cause what may—and I leave it for finer clinicians to settle the question. The results are far superior to those secured when given orally.

The third group in which it is highly recommended by English authorities is the post operative retention of urine. In this condition it obviates the necessity of catheterization with its discomforts and occasional bad

effects. This is brought about by its special influence on the sphincter urinae muscles.

The fourth group of cases are those of toxemias of focal infection by gonococci or any other septic bacteria, such as arthritis, myelitis, sciatica, etc. I had not much opportunity of trying this drug in this class of cases, but in those few cases in which it has been tried, the results were encouraging and warrant further trials.

The fifth group of cases are those comprising local and systemic infection such as Cholecystitis, Meningitis, either tubercular or septic (as this drug has also been found in the Cerebro-Spinal fluid), Otitis, acute or chronic Pneumonia, Typhoid, etc. In all these conditions it has been tried for its supposed antiseptic properties and has been favourably reported on by French Physicians, some giving it by mouth and some intravenously. My opportunities in the treatment of these diseases are very limited, but those more favourably placed may give it a trial and I have mentioned these only with the idea of drawing attention to the usefulness of the drug so that those who may have occasion to treat this class of cases may give it a trial and favour us with their experiences. I have tried it in one case of Pneumonia with Sodium Iodide. The fever began to come down by lysis from the next day and was normal on the 7th day. The general condition remained good. I however cannot state whether the good effects were due to Hexamina or its associate Sodium Iodide. Four Injections were given and as the temperature was normal further injections were stopped.

I usually give Hexamina grs. 15 in 10 c. c. sterilised in Ampoules, daily in acute cases and on alternate days in sub-acute or chronic cases. In conditions which require the use of Iodides as well, such as Epidydimitis, and Pneumonia I add Sodium Iodide to this in the proportion of grs. 10 in 10 c. c. as I have found this a better method of introducing Iodides in the system. I will arrange to supply the ampoules of Hexamina both alone and in combination with Sodium Iodide to those who are interested in their use.

A COMPLICATED CASE OF MITRAL INCOMPETENCY

By

G. Narayanamurthy, L.M.S., Anakapalle.

K. N. male, aged 38, complained of swelling in the feet and legs and breathlessness. Previous history of having been operated for Inguinal Hernia on the right side six months ago. History of rheumatic fever three years ago.

On examination both legs and feet were swollen, the swelling easily pitting on pressure. Tongue coated ; appetite not impaired. Bowels rather constipated. Abdomen not distended. No fluid in the abdomen. Liver and spleen not enlarged.

Lungs clear. Respirations 24 p.m. No palpitation, Apex beat visible just below the nipple in the left mummary line. Left boundary of the heart displaced one finger's breadth to the left of the left mammary line. Other borders in normal position. There was a systolic bruit in the mitral area, fairly conducted towards the axilla. Another systolic murmur in the pulmonary area was present probably hæmic. Pulmonary second sound accentuated. The heart sounds were diffuse but not feeble. I had every reason to suspect a presystolic mitral murmur but it was not quite evident. There was no irregularity of the heart beats, no gallop rhythm, no epigastric or jugular pulsation nor any cyanosis. Urine high coloured. Specific gr. 1020 with a trace of albumin. Pulse 115 p.m. Good volume Temperature 99°.

I put the patient on a restricted fluid diet and the following mixture I continued for four days. Swelling was reduced considerably.

Rx. Tinct Digitalis m. XLV.
Caffeine Citras gr. XII.
Mag. Sulphas 3. VI.
Mist. Diuretica oz. III oz. I t. d. s.

On the fifth day at 12 noon, I was surprised by the patient's relatives telling me that the condition of the patient was serious. I ran up and saw fifty persons of both sexes gathered round the patient's bed which was dragged into the open air. One of them was fomenting the patient's abdomen and another was blistening him with a lit cigar in various places.

I made my way to the patient and the sight was indeed alarming. The patient was lying unconscious i.e., eyes open, pupils slightly dilated, eye balls rolling frequently, mouth frequently twisted, tongue not bit, both hands slowly going up and down. The lower extremities were lying quiet. Respirations hurried. Pulse quiet as before and not at all discouraging. Temperature 100·5. I enquired whether the patient had a previous epileptic history which was naturally denied. I concluded the patient's condition to be one of cerebral embolism and ordered him to be taken indoors and to be kept undisturbed with head raised. I gave a glycerine enema which did not work satisfactorily, and not knowing any method of treatment, I retired from the place. The patient's relatives insisted on my giving some mixture and they undertook the responsibility of administering it by mouth. I gave four doses of

Rx. Sodii Bromide gr. X
Lig Trinitrini m. II
Tinct. aconite m. II
Aqua oz. I every 4th hour.

with a view to calm the brain, to keep the vessels dilated and the B P at a low level.

I never expected a recovery from the condition and even if the fit recovered, I expected an impairment of speech or some organ. Next morning to my surprise the patient came to senses and was answering questions. Since then he has progressed steadily.

I conceived that the heart was over stimulated with detachment of any existing vegetation. Though I have known and heard of hearts tolerating up to 18 dr. of Tinct Digitalis in cases of auricular fibrillation, I suspended the digitalis treatment since then.

The embolism might have been transient or disintegrated allowing free or anastomatic circulation.

As this is the first of its kind I have ever noticed during my short experience of private and hospital cases, I shall be thankful to any reader of the Antiseptic who might enlighten me with a correct explanation for the occurrence of the group of symptoms which I have diagnosed to be due to cerebral embolism.

SUCCESS IN LIFE

By

C. PAPARAO, L.M.P., M.C.P. & S., VIZIANAGARAM.

To the Final Year Medical Students of the Vizag Medical School on 2nd March 1924 :—

Spent many a hanging hour,
For studies with longing power,
Under strain of whim and vigour,
To gain "Wanted" without rigor.
Thus you spent four long years,
With blooming less cares and fears.
So you sit for your "Finals"
With ease, but tottering trials,
Shall lead you to run and ruin,
Cursing profession, tution and gain.
Seek not a ticket of unemployment,
Lest you run under disappointment.

Serious study and observation in wards,
Are but two steps to success in wards,
To open portals-new and raw, renewing,
Old theories and treatment without burrowing.
O! Young Medico ! Leader's leader thou art,
Only time to settle this faithful part.

Lose no time to further your start,
Under a senior with a famous part,
Showing respect to profession and self.
Treating "touting" as bad as felony itself,
O! You dear ! Throw not your books,
Into oblivion, lest you miss in nooks.

Let your motto be "Read and observe,"
To fit you ready without conserve,
Speak no ills of your dear elders,
But try to correct behind their boulders.
O! Repent and rectify daily mistakes,
Stabilizing ability and confidence in looks,

Good library with up to date journals,
Never miss you in serious counsels;
Borrowing from other systems not infamy,
To bar you from registration in dismay.
O! Young friend ! Forget not that misery,
Associate of drink, debt, debauchery.

Self dignity, life long, if really kept,
Prestige to self and profession never bereft ;
Underselling in jealousy or pressure begets,
No affluence or progress, nothing but regrets.
Beware ! production above market demand,
Wakes you up to self remand,

O! Medical Tyro ! Professional Etiquette !
Falter not in your irate petticoat,
But weight and colour given in truth,
In your dealings with brethren in sooth,
Calm but steady walks in life attainable,
Only in such talks to self retainable.

Remember ! Vizag your Alma Mater ! Merry,
In love and respect to Colonel Choudary,
Not forgetting Rao Saheb Dr. Subbarao,
And lecturers whose kindness ever borrow,

Show patience to patient's ills and worries,
Sure way to success with jolly merries.
Though at foot-hill, an up-hill work ! Yes !
L.M.P. to top that hill with L.M.S. and M.B., B.S.,
Wrath, jealousy, scorn, and other bubbles,
Well pioneered, they in turn court no troubles.
O ! Conscience, Patience, Obedience, Kindness,
Pillars for your ways of life to success.

A NUMBER OF PRACTICAL SUGGESTIONS OR THERAPEUTICAL NOTES

By

RAO BAHADUR THAKUR RAMDHARI SINHA, MEDICAL PRACTITIONER, ETC., ETC., MOTIHARI, P. O. (BEHAR AND ORISSA).

11. Every organ in the human body is invested with two membranes, one of which secretes an alkaline liquid, the other an acid solution, and the two secretions form a lubricating substance for the organs and a digestant for the stomach.

12. Dilute phosphoric acid is a nerve bracing remedy—a true nerve tonic. It is effective in brain fag in small doses. It is valuable where there is weakness from sexual excess.

13. Potassium Bichromate in doses of 1/60 grain, triturated with sugar and milk and given every 2 or 3 hours, gives excellent results in the treatment of bronchitis in children and in bronchial irritations.

14. Alstonia Constricta (Dita Bark) is a tonic and stimulant to the cerebro-spinal system. It has an active anti-periodic influence and is valuable in malarial fevers, sometimes superseding quinine.

15. I have used Viburnum prunifolium (Tincture) in cases of threatened abortion and in haemorrhage from the uterus. I combine potassium bromide with it in the haemorrhage of the menopause with good results.

16. In the treatment of watery diarrhoeas with or without fever, arsenite of copper in doses of 1/250 to 1/100 of a grain, largely diluted is very efficacious. Summer diarrhoeas in children are also benefitted.

17. Chionanthus (or chionia) serves an excellent purpose in the removal of jaundice whenever there is no fixed obstruction. It has a decided influence over the glandular system, in bilious and intermittent fevers.

18. Capsicum is an important remedy as a general stimulant to the nervous system. It is valuable in enfeebled conditions, having been used with excellent results for paralysis. It is a superior gastric stimulant,

19. Extreme cases of urticaria are relieved by application of vinegar one part and water two parts; of course, the bowels should be opened by salines.

20. Apocynum cannabinum is classed as an emetic, catharhic expectorant, diaphoretic, diuretic, alterative, tonic. Given in small doses, it acts as a tonic, increasing digestion and assimilation of food and strengthening nerve force and toxicity of heart.

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THERAPEUTIC NOTES

By

PHANI BHUSAN MUKERJE, JALLEY.

(CONTINUED FROM MAY, 1923 ISSUE).

97. Injections of Sodii Salicylas, 15 grains in 10 c.c. distilled water, given intravenously are specific in acute, subacute and chronic rheumatism. The injections are given daily in the acute cases and on alternate days in the chronic ones. In the latter 15 grains of Sodii Iodide may be added since it helps and is better tolerated than when given by the mouth. The injections can be continued for a month more without any ill effects.

98. In cases of rheumatism the cure is immediate, pain disappears in no time, fever goes down in 5 or 6 hours and the swelling of the joints subsides in a week if Sodii Salicylas is injected locally around the painful and inflamed joints.

15 grains of Sodii Salicylas are dissolved in 15 c.c. of distilled water or normal saline and injected locally at the rate of 10 to 15 minims per spot. If there is no inflammation in the joints and the patient complains of pain all over his body and joints the whole of the quantity is injected deeply into the buttock. The injections are given daily. Not more than four are required. Sodii Salicylas, grains 5, thrice daily, is given by the mouth, after the injections are discontinued, for a month. Nothing but mild saline purgatives are given during the course.

99. Injections of Acid Salicylic locally into the painful and inflamed areas are also efficacious in cases of rheumatism. 1 c.c. of a 1 in 1000 solution is used daily until relief is obtained.

100. Instantaneous relief is obtained by administering apomorphine Hydrochloride, gr. 1/10-¼, by the mouth, in cases of gastric and intestinal colic. In adults one dose (gr. ¼) is often enough.

101. Apomorphine Hydrochloride, gr. 1/36 in water, drachm one, given every two hours, is equally efficacious in checking the vomiting of pregnancy.

102. Nocturnal emissions so often seen in young persons suffering from spermatorrhœa yeild remarkably to Liquid Extract of Salix Nigra. 20 minims of the drug diluted with one ounce of water are given half an hour before going to bed. All sources of sexual irritation should be removed.

103. Salol 3 and camphor 2 form a viscid liquid when mixed and successfully stops the discharge of pus from the ear in suppuration of the middle ear. The ear is washed preferably with Hydrogen Peroxide, swabbed with cotton wool and the combination dropped.

104. Pain referred to the epigastrium is pathognomonic of pleurisy along the diaphragmatic attachment. It can be relieved by a mixture contuining the following: Ammon-chlor, grs. 10, Sodii Iodide, grs. 3, spt. ammon aromat, ms. 20, Liq. Ammonii Acetatis, drs. 2 and water, oz. 1.

105. Strong solution of Ammonia or Liquor Ammoniæ Portis constitutes, par excellence, the capital application for bites by poisonous insects, bees, wasps, scorpions, etc. inasmuch as it neutralizes their poisons and thereby lessens the pain and swelling caused by them.

In a recent case an elderly woman who swooned away every 15 minutes from the pain occasioned by the bite of a large black wasp fell into deep sleep as soon as the solution was applied.

106. Obstinate and persistent Hiccough in a weak and anæmic patient suffering primarily from painful enlargement of the liver which yielded temporarily to injections of morphine and lasted for seven days was ultimately cured by a single dose of chloretone (grs. 10).

107. Tincture of Ferric chloride brushed over the vesicles of Herpes Zoster aborts them admirably. In the ulcerative stage Zinci oxidi and Acidi Borici should be dusted or an ointment containing both should be applied.

108. Tinct. Ferri Perchlor applied similarly over the spreading zone of Erysipelas checks the progress of the disease and cures it rapidly by reducing the pain and inflammation. The medicine should also be administered by the mouth and better still an injection of Tinct Iodi 1 c.c.—given intravenously.

COMPLETE COMA AND PERFECT RECOVERY

By

MANAYATH ANANDAN, L. M. P., MEDICAL OFFICER, PERUNDURAI.

Saraswathi Ammal, Brahmin, aged 40 years, mother of 6 children (two of them dumb) fasted on account of Ekadasi on 17th March 1924, went on 18th morning to the adjacent well to take water for cooking purposes, drew two buckets of water in a vessel and fell down backwards at 9 A. M. hitting the head against the floor, which was paved with concrete. It was reported

that she had stertorous breathing and had foams at the mouth immediately after the fall. I was called soon after, as she was residing close to the dispensary and I saw the patient at 9-15 A.M. in a pulseless and powerless condition. Heart's action stopped completely; pupils dilated, eyes fixed and insensible to touch; mucus collected in the air passages, and produced death-rattle. She breathed shallow twice, and stopped breathing and the husband and children began to cry. I lost hopes, but still wanted to make a trial and so I pressed against the chest for two seconds each time and continued to do so for a minute, when to my surprise she breathed once, bringing out froth at the mouth and the breathing continued.

Cloth dipped in cold water was applied to the head in the meantime. Hypodermic injection of Digitalin 1/100 gr. was given and the heart's action was restored. All other symptoms remained the same as before till 5 p. m. when the eyes moved and a little urine was passed involuntarily. In the noon she passed blood through the nostrils and mouth and had a copious discharge of blood through vagina. She is an illnourished, pale-looking woman, who is not generally in the habit of getting her normal discharge of blood during the monthly periods. Urine was drawn by midwife at 5-30 p. m. and an enema of warm water was given as she could not swallow anything by mouth; but even the water did not come out, and a rectal tube was inserted to allow the water to escape. At about midnight she had four broad watery motions after the administration of a drop of croton oil at night, when she was able to swallow it.

On the 19th morning at 5 o'clock she vomited and got up from her bed and wanted to go out to answer the calls of nature, not knowing what had happened to her. Complained of pain in the head and abdomen. Speech was incoherent till noon. Cold water was applied to the head till 19th evening and though weak she is now walking about completely cured.

The Antiseptic

MAY, 1924.

MEDICAL RELIEF IN INDIA. *

We regret very much that certain statements made by us in the editorial of the April number of "The Antiseptic" should have provoked hostile criticism from unexpected quarters*. We regret also, that we should have been dragged to the discussion of a controversy which might be unpalatable to some of our readers but defend as we must, our own grounds we venture to offer a few remarks by way of explanation. True to the traditions of our profession and loyal to the old dictum "Doctors differ", we disagree with the views expressed by our esteemed critic from Ranchi. In the first place, exception is taken to the statement "Nowhere in the world is medical relief so poor as in India", and the instance of a larger and more densely populated China is cited to show the availability of much less medical relief there than in India. But India is not China. India is groaning under the heavy weight of a chronic economic distress. Her powers of endurance and resistance to disease are appallingly low so much so we find a high rate of mortality recorded year after year. The deaths in India annually number 7,000,000 out of a total population of 360 millions. Epidemic diseases carry a heavy toll in India while, in China, they are much less fatal, because of the high resisting power of the Chinese. Dr. Arthur H. H. Smith, makes the following observations with regard to the physical traits and characteristics of the Chinese, which we commend to our critic and to our readers :—

1. "Epidemic diseases, while common in China, are much less fatal than in India".

2. "The Chinese are a hardy people, fitted for any climate from the sub-Arctic to the Torrid Zones.....Almost all Chinese

* Vide letter published in correspondence column.

exhibit wonderful endurance of physical pain constantly submitting to surgical operations without anæsthetics and without wincing. As a people the Chinese have constitutions of singular flexibility and toughness and upon occasions can bear hunger, thirst, cold, heat and exposure to a greater degree than perhaps any other race, with the exception of the Japanese. From a physical point of view, there is no race of mankind now in existence, if indeed there ever has been any, better qualified than the Chinese to illustrate the survival of the fittest".

3. "If the Chinese have any talent at all, they have and have always had a talent for work.....They rise early and toil late. Farmers in particular toil ceaselessly. Artificers of all kinds ply their trades not merely from dawn till dark but often far into the night. With the exception of the period just following the New Year, the holidays are infrequent."

4. "Here then is the most numerous, most homogeneous, most peaceful and *most enduring* race of all time."

5. "All these, with their language, literature, philosophy, and powerful race traits mark the Chinese as one of the most fitted divisions of the human family."

For such a sturdy race as the Chinese, perhaps, we may say without fear of contradiction, the sturdiest and healthiest race in the world, no extensive medical relief is necessary. There is an old proverb which says that in China physicians are paid only when their constituents are well and never when they are ill. China can boast of a hoary medical system which is continued to the present day unimpaired, but, on the other hand, much improved in the light of modern science. Every year following the New Year, the Chinese hold a public exhibition of their physique and "the preservation of body" is part of religion with the Chinese. An effete nation like the Indians of to-day, who have been and are still being bled white by excessive taxation and commercial exploitation, whom ever-recurring famines have emasculated to a considerable extent and whose strength and vitality have been sapped by frequent visitations of epidemics, can bear no comparison whatever with the Chinese. With the indigenous systems of medicine in India almost destroyed, with the forced necessity to wait for the empty bottles of

our Pharmacy to be replenished every time from across 6,000 miles, with the costliness of the treatment and the scantiness of the output of medical men, and above all, the paucity of Indian Finance which is more lavishly appropriated to the defence of the Empire than to the up-building of a strong and sturdy nation, with these and many other factors too numerous to mention, the lot of the Indian is becoming a matter of grave concern and anxiety to every well-wisher of India. We, therefore, plead "not guilty" to the charge of exaggeration or untruth that is levelled against us in making the statement that we did in our editorial of last month viz., "Nowhere in the world is medical relief so poor as in India".

Again, we said that the Government had "miserably failed in its mission to govern in the interests of the people". Our kind critic, while admitting the niggardly treatment of the departments of Medicine, Industry and Education by the Government in the past, tries to throw the blame on the people themselves for not accepting the little help that is offered for the alleviation of the sick and for the spread of education. The public are yet to be convinced of the utility of the Western system of medicine and their leanings are still towards their dying indigenous systems. Except in cities, where the Allopathic system of treatment is more widely availed of, the rural parts still cling to the old grandams' recipes—plants and herbs available in the back-yard of every household—for treatment of ordinary ailments and suffer in silence when confronted with graver diseases for which there is neither money nor cheap medical aid available near at hand. Education as at present imparted is more suited for the manufacture of quill-driving human machines, than for the up-bringing of a nation sound and strong in body and mind. After years of prayer and protest, the Government has realized the folly of its educational policy and is trying to remodel the system to suit the wishes and aspirations of the Indian nation. What then is wrong or unfair in our saying that the Government has miserably failed in its mission to govern in the interests of the people, when there is enough of evidence to establish it and when the Government itself has in a way confessed it?

Further, we said "we are the laughing stock of modern humanity," because, we are "an ignorant, emaciated half-starved race." No one can doubt those adjectives. We have statistics to substantiate them. Death and disease considerably interfere with

the wealth and prosperity of the nation and especially in a country like India, largely dependent on agriculture, disease lessens the prospect of agricultural advance and a profuse and continuous food-supply. Dr. S. R. Christophers in his presidential address at the Medical Research Section of the Fifth Indian Science Congress, 1924, states as follows :—

"In a country like India, no single factor in its prosperity can be so important as the increase of locally grown food supply. Such increase is brought about by improved methods of agriculture but also by bringing new areas under cultivation. The latter method in particular is peculiarly dependent on the absence of serious prevalence of disease. In the great Canal Colonies, a serious menace is the malaria that is normally induced as a result of irrigation. At first relatively healthy, such areas are liable to an increasing malarial endemicity that if it does not altogether nullify the good such schemes bring, at least detracts largely from this. In efforts to open up new areas of cultivation, again, disease may often be the factor determining success or the reverse. In Assam, I had the opportunity some years ago of examining a newly opened experimental project for the growing of sugar-cane on a large scale. There exists along the foot of the Himalayas a broad belt of grass land, many hundreds of square miles in extent, almost uninhabited and entirely unexploited. The soil and other conditions agriculturally were said to be favourable and the whole question of the commercial value of utilising the land could be seen to turn upon the prevalence of malaria. When I saw this experimental estate it called to my mind accounts one reads of the operations in the Far West. The ground covered with tall elephant grass was ploughed, elephant grass and all, by huge steam tractor ploughs. If a tree grew where it was not required, it was pulled up by the roots by the powerful machinery. Whether this venture will be a success and add a new industry to Assam will be a matter of whether man or the malaria parasite wins the day."

We do not wish to weary our readers with any more quotations, but we cannot help extracting one more paragraph from the address alluded to above which clearly and in unambiguous language lays down the duty and the huge responsibility of the Government of India in the matter of medical relief. The extract is as follows :— But no Government, however enlightened, can combat disease

without knowledge and were they prepared to lay out vast sums on the public health, their efforts would be nugatory without the contributions of medical research. Both sanitation and medical relief are based on the findings of medical research and are powerless to advance except as a result of advances in the branches of science dealing with disease. The vastness of the problems at issue should not be ignored. It is no question of applying such knowledge only as we now have nor of purchasing the necessary knowledge from Europe. Europe cannot help, for her problems are different and she knows nothing of India's requirements. Only by the encouragement of research in her own territories can India arrive at a proper basis for effectively combating the many diseases that affect her populations and it is the duty of an enlightened Government to allocate a due proportion of her revenues to this purpose." Our kind critic has unfortunately confused the issue by mentioning that the institution of "caste" with its ideas of untouchability etc., is something more mirth-provoking in Indians. A medical journal like "The Antiseptic" is no place for any elaborate discussion on the caste system of the Hindus but one thing must be said in extenuation of caste in India, a view admittedly upheld by expert sanitarians like Col. King, I. M. S., late Sanitary Commissioner for Madras. Whatever may be the merits or demerits of the caste system in India from social standpoint, it is certain that, from the health point of view, it has very great advantage in that it has successfully warded off danger to lives from epidemics by isolation and segregation and life-long misery from contact with undesirable persons, surroundings, and environments. With that view of Col. King, we fully share and entirely agree.

The last point of difference is with reference to the training of nurses. We do admit that the status of Indian women and their role in public life are at the present day far from satisfactory. But given the necessary education, training and opportunity, they will surely prove equal to the task and exhibit their talents in the field of nursing quite as well as their European sisters. The art of nursing and tending to the sick is not unknown to Indian womanhood and we have even now a promising nurse, perhaps in an embryonic stage, in every home in India. Our contention is that the Government has failed to make the best use of the material at hand and turn it to the

best advantage of the Indian nation socially and economically. The millennium is perhaps impossible without the Indianisation of Services and with the speedy realization of this aim, we may be certain, that as day follows night, everything else will come in its train in quick succession without any great effort or struggle.

CURRENT TOPICS.

MEDICINE.

Transmission of Leprosy by Mosquitoes. Gomes, Brazil Medico 29-12-23 (From C.M.L.J. A.M.A.)

Gomes frequently found lepra bacilli in mosquitoes in a leper asylum and observed leprosy develop in individuals who never came in close contact with lepers, but lived in the same locality as one or more lepers. He incriminates the mosquito as the carrier.

Oral Preventive Vaccine in Dysentery. Bull, Aead de Medicine 15-1-24 (from C.M.L.J. A.M.A.)

Gautier gave orally polyvalent B. Dysentery Vaccine containing 3 billion per c.c. as a prophylactic against dysentery. The adult dose was 1 c.c., ½ c.c. for children over two years and ¼ c.c. under two years repeated daily for 3 days one hour before a meal. In nearly 30,000 cases thus vaccinated, not a single case of dysentery occurred. A little larger dose was of use in the treatment of the disease. (Breskda's method of vaccination has been found useful against other typho-colon and allied organisms.)

Effect of Adrenalin on Hepatic Glycogen in Insulin Hypoglycaemia.—Winter and Smith. J. Physio 14-3-24 page XXIV.

If insulin hypoglycaemia is allowed to continue the hepatic glycogen store becomes entirely depleted. The convulsions may occur when a considerable quantity of glycogen is left in the liver even though the animal be starved for 24 hours before insulin administration. Administration of adrenalin to an animal in a condition of insulin hypoglycaemia causes the hepatic glycogen store which has been depleted by the hypoglycaemia to rise. Winter and Smith interpret this phenomenon to mean that insulin causes depletion of hepatic glycogen store by converting glycogen into some intermediate body and that adrenalin reverses this action of insulin.

According to the theory put forward in January 1924, Diabetes No. of the *Antiseptic* page 51, depletion of the hepatic glycogen store in insulin hypoglycaemia results from anoxemia interfering with the normal hepatic function of endogenous glucose formation from fats. Adrenalin would correct this anoxemia, thus allowing the hepatic cells to regain their normal function of endogenous glucose formation from fat. With the improvement in this function the hepatic glycogen store would naturally tend to rise to the normal physiological level.

Treatment of B. Coli Infection with Mercurochrome 220 Soluble.—Young and Hill, J. A. M. A. 1—3—24.

The authors report specific results in the treatment of Coli group infection by Mercurochrome intravenously. The dose is 5 milligrams per kilogram of body weight in 1% solution. In 4 reported cases of B. Coli infection after a single infection the temperature came down to normal within a day and the bacteria disappeared from the sites of infection. The first case was of general septicaemia secondary to pyelitis and in a moribund condition but recovered completely. The second case was of retroperitoneal infection following bladder instrumentation, the infection clearing up spontaneously. The third case was of pyelonephritis and the 4th of cystitis. In the case of chronic pyelonephritis without fever due to B. Lactic aerogenes, a single injection sterilized the urine. In one case of B. Coli pyelitis however 5 injections at intervals of one or two days were required to make the case afebrile and did not sterilize the urine. (In the Antiseptic June 1923, page 275, it has already been claimed that mercurial compounds have a specific effect in typhocolon and allied infections, being found to have a rapid curative effect in typhoid, bacillary dysentery and green diarrhoea.)

A Specific for Whooping Cough.—Namasivayam, Deccan Medical Journal, January 1924. Namasivayam reports treatment of twenty-five cases of whooping cough with the seeds of Pongamia glabra powdered after decortication and given orally. The Vernacular names for the drug is Karanj in Hindustani, Kaungoin in Telugu and Pongam Kottai in Tamil. The cough was completely aborted in all cases in 7 to 12 days. The following are the doses he recommends thrice daily, 1 to 3 months, grain 1; 4 to 6 months, grains 2; 7 to 12 months, grains 3 to 5; 2 to 6 years grains 5 to 10; 7 to 12 years, grains 10 to 12; above 12 years grains 15. The oil present in the seeds appears to be the active agent, as the residue after expression is inert. The powder should not be wrapped in paper as paper absorbs the oil. The powder loses efficacy on being kept and should therefore be prepared freshly.

Non-Operative Treatment of Gastric Ulcer. B. M. J. No. 3291, page 139 Bolton.—Diet in cases of gastric ulcer should be bland and finely divided. Diet containing substances exciting increased secretion of gastric juice (*i.e.*, meat extractives, sauces, spices, etc.,) by causing increased acidity delays healing of the gastric ulcers, the acidity causing increased inflammatory changes and necrosis in the base of the ulcers. Solid masses introduced into the stomach (meat etc., in large masses) mechanically excite increased peristalsis and secretion of acid gastric juice, both of which prevent epithelization of the ulcers. Bolton produced artificial gastric ulcers in cats and found that in milk-fed cats the ulcers were completely covered with epithelium in twenty days, whereas, in the same time, cats on meat diet showed no signs of healing. In a cat a normal full meal of milk leaves the stomach within 3 hours, while a full meat meal takes twelve hours. Experimenting with monkeys it was found that gastric Hcl. concentrations of 0·18% and above delayed healing. Artificial pyloric stenosis also delayed healing. Butter, fats and oils inhibit gastric secretion; opening of the pylorus causes neutralization of gastric contents by allowing regurgitation of alkaline duodenal juice and favours healing. Milk may become solid in the stomach by clotting, but clotting can be prevented by adding sodium citrate. The diet in gastric ulcer should be milk, butter, fats, oils, finely divided cereals, eggs raw and half boiled, finely minced meat of which the extractives have been removed by boiling, etc. In the majority of cases of gastric ulcer pyloric relaxation which normally takes place when gastric Hcl reaches 0.2% is deficient causing hyperacidity which requires treatment with antacids as calcium carbonate, Magnesium hydroxide, and Soda Bicarbonate. Belladonna is useful, as atropine induces pyloric relaxation. The author condemns Sippy's method of treatment of complete neutralization of gastric acidity requiring excessive administration of alkalies, as gastric Hcl concentration up to 0·1% does not delay healing and excessive alkaline treatment may cause toxic symptom of alkalies. Only recent ulcers respond to medical treatment. The only treatment for chronic ulcers with fibrosed bases is excision.

SURGERY.

Etiology of Neoplasms.—Acta Oto Laryn. Vol. V. 3—9—23. Ulmann (Ept. B. M. J.) Ulmann inoculated the watery extract of a laryngeal papilloma removed from a boy into human skin and vaginal mucous membrane of dogs and observed that papillomæ developed at sites of inoculation. The watery extract of these papillomæ after filtration through bacteria-proof filters again reproduced papillomæ on reinoculation

The histological character of the papillomæ varied corresponding to site of growth. Ulmann concluded that the aetiological agent in these warts was a filter passing micro-organism.

(These experiments may throw light on the action of Mallannah's alocohol-treated vaccine in cancer reported in the Antiseptic, January 1923. The vaccine in these cases may not be the tumour cells but rather the filter passing virus infecting these cells and stimulating neoplastic changes in them.)

Intravenous Injections of Gentian Violet for Staphylococcal Infections. Young and Hill. J. A. M. A. 1-3-24. Churchman discovered in 1910 that Gentian violet was a remarkable bactericide for gram positive staphylococci. The drug is somewhat toxic however. In rabbits an intravenous injection of 20 milligrams per kilo body weight killed with in 5 hours. Though single injections of 5,7.5 and 10 milligrams per kilo were tolerated, with repeated injections thrice a week, 7 injections of 5 mg. per kilo, 4 injections of 7·5 mg per kilo and 2 injections of 10 mg per kilo respectively proved fatal in rabbits. In man the dose used was 4 to 5 mg. per kilo in ½% aqueous solution and were given at 24 hours or greater intervals. 3 cases of human staphylococcal septicaemia are reported in which one to three injections were given and in which great improvement followed, the blood became sterile in all three cases, and the temperature becoming normal in two cases. Two cases of staphylococcal cystitis are reported in which one injection sterilized the urine.

Insulin in the Treatment of Pre and Post Operative Non-Diabetic Acidosis. J.A.M.A. Vol. 82, No 9.—Fisher and Snell confirm the report of Thallimer regarding the valuable adjuvant effect of insulin in the glucose treatment of non-diabetic acidosis. They report two cases of pre-operative acidosis, both cases of acute abdomen, one a gangrenous appendix and the other biliary obstruction, in which treatment with hypodermic insulin, intravenous glucose and rectal soda bicarb caused rapid reduction of urinary acetone and diacetic acid and gave relief from vomiting. The rapid improvement under insulin treatment changed the prognosis of the operative risk from bad to good. A third case reported of post operative acidosis 24 hours after absorption of 2000 c.c. of 8% rectal glucose still showed urinary acetone to but 2 plus. Rapid clearing of urinary acetone followed administration of 18 units U 20 insulin Tilly.

Stovaine—Caffeine Spinal Anaesthesia. Desplas, Lancet 8-12-23.—Desplas confirms Jonnesen's report of the superiority of stovaine cum caffeine spinal anaesthesia over that of stovaine alone. Jonnesen's formulae, Stovaine 0·06 gramme, caffeine 0·50 gramme, Soda Benzoate 0 50 gramme, water ad 2 c.c. was used. With this anaesthetic Desplas observed no vaso-motor modification and marked reduction of vomiting. The most remarkable thing was that post spino-anaesthetic headache was abolished. Addition of caffeine to stovaine does not interfere with the anaesthetic effect of stovaine. (According to Jonnesen caffeine prolongs this action of stovaine). As prolonged retention of urine may be caused by such large spinal injection of caffeine he advises a smaller dose of caffeine (0·15 gram).

Sensitization to Foreign Protein in Iso-Skin Grafting.—Holman, Surg. Gynae. and Obst. XXXVIII. Iso-skin grafts, *i e.*, grafts taken from one individual of a species and grafted on another of the same species after developing normally for some time often undergo retrogression gradually diminishing in size and ultimately completely disappearing. This retrogression after a temporary normal growth is the result of immune reactions developed against foreign cells though iso-special. The author reports a case in which the presence of iso-skin grafts also caused a general toxic reaction in the system of the recipient. The patient, a boy aged 5 years, was grafted on an extensive denuded area with skin grafts from his mother who belonged to the same blood-agglutinating group as her child. The grafts took and grew normally covering within 4 weeks almost the whole denuded area. The patient then developed general exfoliative dermatatis with weeping fissures and bleeding cracks, with evening rise of temperature and high pulse rate and later on appearance of blood in the stools. Simultaneously the grafts started retrogressing and blisters commenced developing under established grafts detaching the grafts from the surface of the body. When such remains of the grafts as were left were curetted away there was rapidly a marked general improvement in the general condition of the patient with cessation of the dermatitis. Subsequently the granulating areas were successfully auto-grafted from the patient's own skin.

Peri-arterial Sympathectomy.—Christopher, Surgery, Gynae. Obst. September, 1923. This Peri-arterial sympathectomy, introduced by Jaboulay and publicized by his pupil Leriehe is the excision of the sympathetic fibres in a circular cuff of the adventitial arterial coat for various vaso-motor and tropic disturbances in the area supplied by the artery.

Briefly the technique is as follows :—After incising the fascial sheath of the artery, the artery is isolated for a length of 10 c.m. An incision is made into the adventitial coat along the length of the artery and a circular cuff of the adventitial coat completely seperated from the artery by blunt dissection and then excised. The destruction of the nerves in the external wat of the artery protects the distal parts of the blood vessel and its branches from the vaso-motor reflex influence of the central nervous system. The immediate effect of a successfully performed operation is a vaso-constriction in area of supply lasting a few hours followed by vaso-dilation lasting from 4 to 6 weeks. This procedure is reported to give good results in Raynand's disease, arteritis obliterans, tropic ulcers, exophthalmic goitre, intermittent claudication, scleroderma, keratosis, kraursosis vulvae, varicose ulcer, eczema, etc.

The Diagnosis of Perforated Duodenal and Gastric Ulcer. *(Zur Diagnose des perforierten Duodenal-und Magenulcus.)* F. OEHLECKER. *Archiv fur Klinische Chirurgie*, Volume 127, 1923.

While the diagnosis of perforated ulcers of the stomach and duodenum is usually made on the basis of the classical symptoms of sudden onset, sense of internal rupture, severe pain, board like abdominal rigidity, and previous history of long standing stomach trouble, a rather high percentage of cases is seen without any previous history of illness and with physical signs difficult to distinguish from those of gall-stone colic, pancreatitis, and appendicitis with peritonitis. The author's differential sign is a sudden, spontaneous, single, attack of pain over the outer portion of the right or left shoulder, (usually the right) which is due to stimulation of the sensory fibers of the phrenic nerve by the sudden outpouring of blood or stomach contents into the subphrenic space. This pain is fairly constant, but may not be noticed by the patient until questioned, since the much greater severity of the abdominal pain distracts his attention from everything else. The shoulder pain, of varying severity, may occur immediately after rupture or after 2 or 3 hours. It differs from the shoulder pain usually attributed to other diseases by the acuteness of its onset, the absence of hyperalgesia or hyperesthesia in the region of the shoulder and localization to the shoulder itself rather than to the region of the shoulder blade.

A. T. S.

The Surgical Treatment of Burns.—WALTER ESTELL LEE, Philadelphia. *International Journal of Medicine and Surgery*, November, 1923.

As burns differ widely in degree, character of tissue destruction, bacterial content, and progress of healing, no one procedure as a local measure will prove equally valuable for all cases and all stages.

Dakin's solution, when it can be borne by the patient, chemically removes the necrotic tissue of burns in the same satisfactory manner as in wounds, but only a small proportion of patients will endure the pain caused by its application to such hypersensitive surfaces. In the majority of cases Lee has had to be content with natural tissue autolysis assisted by the mechanical cleansing of the daily immersion in a 4 per cent. sodium bicarbonate solution.

Until the condition of surgical sterility is obtained a single layer of wide mesh paraffin gauze and the exposure of the part to the air provides the necessary drainage and a dressing that will float off the wound with minimal trauma.

It is usually necessary to employ a chemical antiseptic to obtain and maintain surgical sterility of burned surfaces if exposed to the air. The chlorine group has been the most satisfactory in Lee's experience. They must be tested to avoid the application of irritating free chlorine or hydrochloric acid in using dichloramine-T. Very weak strengths should be used at first (one-fortieth of 1%); as the patient becomes accustomed to the antiseptic it may be gradually increased to 0.5%.

The covering of burned surfaces, when surgically sterile, with wax films often maintains their sterility and thus provides the best conditions for the growth of new skin. The rate of growth of new skin and of grafted skin is at the maximum upon surfaces which have reached the condition of sterility in the shortest interval of time. *A.T.S.*

OBSTETRICS AND GYNAECOLOGY

Insulin in the Treatment of Hyperemesis Gravidarum.—J.A.M.A. 1-3-24. Thalimer who has already reported the good effects of combining insulin with glucose in post operative acidosis reports three cases of toxaemic vomiting of pregnancy in which continued treatment with glucose and insulin not only caused marked reduction in the ketosis and toxaemic vomiting but was followed by some lasting alleviation in the symptoms of toxaemia when treatment was discontinued.

Toxaemia of Pregnancy Treated by Injections of Marital Serum. J. A. M. A. Vol. 82, No. 11, page 903.

Wdaeta believes that the toxaemia of pregnancy results from the action of foetal proteins originating from the paternal portion of the foeta germ plasm. He has treated six cases of toxiemia of pregnancy by repeated injections of the sera of the husbands. With the injections increasing relief going on to complete cure, was obtained, the nausea, headache, vomiting, and albuminuria gradually diminishing. The injections may cause local inflammatory and general reaction (pyrexia). The dose of serum was 3 to 5 c. c. He advises injection of the husband's whole blood citrated with 1092 c.c. of 2% citrate to prevent clotting, as this method does away with the procedure preparing serum.

Garlic in Lobar Pneumonia. B. M. J. 22-3-24 Crossman.—Crossman administers an alcoholic tincture of garlic bulbs (1 in 8) (manufactured by Ferris & Co., Bristol) in half drachm doses diluted in water every 3 or 4 hours in the treatment of lobar pneumonia. He has not failed in a single case to bring the temperature, pulse and respiration to normal within 48 hours. He had only two deaths in both senile cases, one, a diabetic, and the other who died suddenly of heart failure after defervescence. He claims also good results in septic bronchitis, influenza and bronchiectasis. Small doses have no effect.

A new method of Preparing Vaccine. Rene Zivy Lancet, 2-2-24.—Killing bacteria for vaccine purpose, by heating and by various chemical germicides is objectionable as these procedures cause chemical alteration in the bacterial antigens, rendering them more toxic also. Rene Zivy prepares vaccines by repeatedly freezing at—18°C and thawing at +18°C. This procedure kills all organisms if repeated enough and does not alter the bacterial antigens. If grown on gelatin, the gelatin must be washed off before freezing, as it interferes with the lethal action of this procedure. Pneumococci and streptococci require two, B Coli, 4, and enterococci and staphilcocci 6 freezings respectively for complete sterilization.

[Repeated freezing and thawing of blood causes haemolysis of R. B. C's as the ice crystals formed in freezing mechanically destroy, the lipoid cell membrane of the R. B. C's. Presumably there is a similar physical disintegration of the bacterial cell in Zivy's method of preparing bacterial vaccines.]

Gonorrhoeal infection treated with artificially induced Pyrexia.—General and Local Surgery, Gynae., Obst., January 1924 Corbus and O'Connor.

It is a well established fact that the gonococcus is instantaneously killed at 113°F (45°C), and prolonged exposure to heat between this temperature and body heat gradually causes its disintegration. Application of hot fomentation to gonorrhoeal arthritic joints has long been accepted as a valuable therapeutic measure. Fulton in 1913 tried to treat urethral gonorrhoea by a double channelled urethral bougie through which hot water

was kept continuously passing. Weiss put urethral cases for 40 to 48 minutes into hot baths raising the temperature of the bath gradually from 104°F (40°C) to 110°F (43·5°C). In one case in which the body temperature was raised to 108°F (42·6°C) in a 40 minute bath, the gonococcus absolutely disappeared from the urethral discharge. Other workers have tried to treat these infections of mucous membrane by diathermy (alternating currents of such high frequency as to cause heating effects only without any electrical stimulation). Santose experimenting on dogs kept an urethral electrode at 113°F (45°C) for an hour without noting any disturbance in the animals as a result of this procedure. Examining the urethra after 8 days he found no macroscopic leison and microscopically merely epithelial desquamation in the heated portions. Experimenting upon himself and other men Santose found that up to 109°F (43°C) nothing abnormal in the urethra was felt, but starting from this temperature there was a sensation of warmth which gradually increased to the point of intolerance at 114°F (46°C). He has kept the human urethra heated to 113°F (45°C) for one hour without the slightest harmful effect. The authors describe a diathermic electrode invented by themselves with which they treat gonorrhoeal endocervicitis heating the uterine cervical mucous membrane to 116°F—117°F (46·5°—47.0°C) for 30 to 40 minutes weekly. Treatment is painless. As an adjuvant they also give hot baths three times a week for half an hour gradually increasing the temperature from 100° to 110°F (37.7° to 40°C) the vagina being kept open by a wire speculum. In twenty two studied cases the gonococcus disappeared from the cervical mucous in 1 to 7 diathermic treatments. The treatment is however contra-indicated in pregnancy, early acute gonorrhoea or when acute pelvic inflammation, salpingitis, cellulitis, etc., is present.

CORRESPONDENCE.

WHY SHOULD WE NOT LANCE THE TEETH FOR OTHER REFLEX SYMPTOMS?

TO THE EDITOR OF "*The Antiseptic.*"

Sir,

Several children get diarrhoea and fever at the time when they cut their teeth. We often leave them to good sense of nature and prescribe some soothing. Often I have seen cases when the gums are so full that at any time one sees them, one believes that, by morrow the teeth must be out of their pockets. But it is not so. Days, nay months pass, and they do not come out until we devise some mechanical means. I had kept one case particularly under observation where a child of 18 months had his gums lower and upper full but with no eruption of any tooth. This child was a subject of diarrhoea and fever. No soothing would do him any good until I lanced his upper 2 incisors and lower one, and instantly the diarrhoea and the fever stopped, which were all the reflex symptoms. Hence it occurred to me, why not often lance such cases to get rid of the reflex symptoms which often worry the children. I know many are not of the same opinion as mine, and I would like very much if they would give their opinion to the contrary.

Yours etc.,

Manghamal S. H.

AN UNJUSTIFIABLE CHARGE.

TO THE EDITOR, "*The Antiseptic.*"

Sir,

As a regular reader of and occasional contributor to, the Antiseptic I request permission to lodge a protest against certain statements made in your Editorial of this (last) month. To begin with, your opinion that "nowhere in the world is medical relief so poor as in India". Surely this assertion could not be supported by fact. I have lately returned from a short tour in China; a country larger and more densely populated than India. From the little I saw and from what I learnt of medical affairs in China, I am sure that "medical relief" of any description is much less available there than it is in India.

No sane person would be unwilling to admit that the Government of this country in the past has probably done less well than it might have done, and still less well than it intended to do, but to say that it has "miserably failed in its mission to govern in the interests of the people" is not borne out by the facts of history during the last century or more. Money may have been spent very niggardly by the Departments responsible for Medicine, Industry and Education, but was more money available? Furthermore, even where money was spent on Medicine and Education, has not there frequently been a strong feeling against accepting either? Education is impossible if your curriculum is repudiated by those to whom it is offered, I think that an unprejudiced survey of the history of education in India would reveal the fact that the spread of modern education has been hindered as much by the enormous intellectual conceit of its native pundits as by want of public funds. Again, it is surely neither fair nor true to say that the people of Madras, still less the people of India, are "the laughing stock of modern humanity." If "modern humanity" outside India does find something mirthprovoking in Indians, it is not because Indians are "ignorant, emaciated and half-starved," but rather on account of the institution of "caste" with its fundamental ideas of the possibility of physical pollution between one man and another.

Lastly, I venture to maintain that your attitude towards the training of Indian women as nurses betokens extreme impatience. The civilised world modelled its nursing service on that of the English, for whom the idea of training gentlewomen to the profession of nursing was brought into existence about 1850 by Florence Nightingale. Before the advent of this great English lady, nurses in England were persons whose character and professional attainments were hardly exaggerated in Dickens's portrayal of Mrs. Gamp. The training of professional nurses, as we know them to-day, is therefore a comparative modern development. Hence, unless India can produce a Florence Nightingale from among her own people or bring about a fundamental change of opinion in respect to the role of its better educated women, (which at present pivots on marriage and child-bearing), the country has in front of it a long period of waiting for a nursing service of properly-trained and educated Indians.

I am, Sir, etc.,

Ranchi. Owens Berkeley Hill, M.D.

DRUG REVIEWS.

MORSON'S "VULCAN ELIXIR"

(Manufactured by Messrs. Thomas Morson & Son, Ltd. Manufacturing Chemists, 47, Gray's Inn Road, London, W. C. 1. Indian Agents: Mr. R. Krishnaswami, P. O. Box 621, Bombay, Madras Stockists: Messrs. Sri Krishnan Bros., 323, Thambu Chetti St., Madras. Price Rs. 2 per bottle of 50 doses.)

We have received sample of the above preparation which is a palatable compound of Lecithin, Crealin (Wheat Phosphate), Papayotin (vegetable pepsine), Nux Vomica, Lactose and Minerals (Potash, Calcium, Iron etc. probably in the form of Glycerophosphates). We need hardly say that the ideal combination will commend itself to medical practitioners who require a general tonic and stimulant for the nervous, muscular and digestive systems.

It is an admitted fact that disturbances of the digestive functions, nervous and muscular fatigue, disease of the bones and vital tissues cause an increased elimination of phosphorus from the system. Under such conditions nature requires assistance in rejuvenating the vital system to enable the nutritive processes to function properly. We have no doubt that Morson's "Vulcan Elixir" presents in a concentrated form the materials nature uses for the regeneration of the exhausted cerebral protoplasm.

A GREAT MODERN DISCOVERY.

The appearance of the new Arsenical preparation "Sulfarsenol", is now conceded in medical circles to be the most powerful remedy in use for the treatment of all diseases, for which "606", "914" and other arsenobenzol preparations have hitherto been employed. The only one of the arsenobenzol compounds at present on the market which can be given by injection into the muscles or subcutaneous tissue without causing pain is SULFARSENOL. With its introduction, the problem of intramuscular injections, is solved.

POST-OPERATIVE RECUPERATION.

"I set the bone, God healed the patient." So old Ambrose Pare was in the habit of saying to his students. Every surgeon knows that his operative procedure is but the first step in the patient's recovery. The reparative work must be done by the patient's own body. "The operation was a success but the patient died" may be a joke to the layman, but it is likely to prove a tragic truth if the patient's recuperative powers are insufficient for the part he or she is called upon to play in the process. And in less extreme cases every surgeon has experienced, time and again, the tediousness of interrupted recovery where the patient's nutrition and resistance were below par,—the ununited fracture, the unhealed wound, the low-grade infection, and what not.

Among the most important of all to surgical repair are the mineral salts and contents of the tissues; the calcium, the phosphorus, and the like. If the body is impoverished in these elements, surgical repair is sure to be slow, if not altogether prevented. It is for this reason that Compound Syrup of Hypophosphites "Fellows" has always been found so valuable an agent in what may be termed surgical therapeutics. A course of this Syrup following a surgical operation will often change a poor operative risk into a good one, and hasten recovery.

When writing to advertisers please mention The Antiseptic.

BOOK REVIEWS.

A COMBINED TEXT BOOK OF OBSTETRICS AND GYNÆCOLOGY.

By J. M. MUNRO KERR, M. D., F. R. F. P. & S. Professor of Obstetrics and Gynæcology, Glasgow University (Muirhead Chair); J. H. Ferguson, M.D., F. R. C. S.; J. Young. D. S. O., M. D., F. R. C. S. and J. Hendry. M. A. B. SC., M. B. 1st edition 1923 1006 pages illustrated Price 35 sh. [E & S. Livingstone, Edinburgh].

It was commendable on the part of the authors to have thought of the idea of writing a combined text book of Obstetrics and Gynæcology. These two are, it must be admitted, subjects which must be approached and viewed from different angles. While the one subject teaches us to wait and watch the other requires immediate interference and is essentially a surgeon's subject. But it cannot be denied that much can be understood and done by correlating the study of the two subjects because by far the majority of the gynæcological conditions result from carelessness and neglect during pregnancy and parturition. Professor Munro Kerr and his co-authors have therefore to be congratulated on approaching the subjects in a new but nevertheless useful manner. The earlier part of the book deals with Obstetrics while the latter half is concerned with Gynæcology. The earlier chapters dealing with Anatomy and Physiology; normal pregnancy; Pathology of pregnancy: normal labour; abnormal labour; the Puerperium; infant feeding; and obstetric operations are written in the usual text book like manner, the chapters on development and blood transfusion being perhaps the best. The second half of the book is practically completely devoted for gynæcology—a special feature being the chapter on major and minor gynæcological operations. The book in addition is profusely illustrated with very good explanatory diagrams. Coming from the pen of Professor Munro Kerr and his collaborators we need hardly say that the book keeps up the high standard of excellence characteristic of the professor's works We wish it every success.

MAN'S MENTAL EVOLUTION PAST AND FUTURE.

By HENRY CAMPBELL, M. D. Bailliere Tindall and Cox, 8 Henrietta Street, Covent Garden W. C2 London 1928. Price 3sh. 6d. 74 pages.

This book is an expansion of a paper read out before a Pathological Society by the author. The author, in this book, endeavours to enunciate the law by which mental evolution takes place. He also tries to explain why in some cases animal species does advance further than in others. For example, why the primates have reached a higher mental level than the other mammals, and why among the primates man has outstripped all others in the mental race, are given in a lucid form. Further, he explains about the several anthropoid species, and describes why one particular species shot ahead in mental development and trebled its brain mass, while the gorilla, the chimpanzee, and the ourang have during the long years of man's ascent from his anthropid ancestor, remained upon the same rung of the mental ladder. The book is very interesting and we recommend it to our readers.

AN INTRODUCTION TO NATURE CURE.

By MR. JAMES C. THOMSON PUBLISHED BY THE C. DANIEL, Company Graham House, Tudor Street E. C4. London Price 5s. net.

This book treats about Nature Cure, the discovery and scientific value of Diagnosis from the Eye, the evils of drug medicines, the essentials of spinal manipulative treatment, the principles of curative Dietetics etc. in a lucid, interesting and almost non-technical style. Mankind is Nature's product and any transgression of the laws of Nature is sure to be visited with various diseases and untimely death. The remedy lies in Nature alone and the elements of Nature such as Sun, Air, Water, etc., abound with immense curative potentialities and prospects that it were a sin to discard them and go in for drug remedies. Scientists have now begun to discover the futility and poisonous character of the present method of drug treatment and want us to go in search of Nature for cure. We recommend this book to all those who are interested in this line of treatment.

AID TO PRACTICAL PATHOLOGY.

By F. W. W. Griffin, M. A., M. D. and W. F. M. Thompson, 246 Pages. 1923. Baillier Tindall and Cox, 8 Henrietta Stree, Covent Garden W. C. 2 London.

This "Aid to Practical Pathology" is intended for the use of those who may be concerned with the many investigations summed up in the term Practical Clinical Pathology. The book is, throughout a record of long personal experience of the authors and the tests included are those which have been found to be reliable. In view of the prominent place taken to-day by clinical pathology in the diagnosis and treatment of disease, this compact and classified summary of the practical side of the work will be found very useful. The chapters which are devoted for the examination of the urine and blood and gastric contents deserve special mention This book is not only useful for the student going up for the examination but also for the busy practitioner as a ready reference book. The book contains a fund of information which is very essential for practising physicians and surgeons. We recommend the book to our readers.

PRACTICAL DIETETICS—DIET IN HEALTH AND DISEASE.

By Alida Frances Pattee—A. F. Pattee, Publisher, Mount Vernon, New York.

This exhaustive treatise on Dietetics affords interesting study not only to the nursing and medical profession to whom it is particularly intended but also to the lay public who are anxious to keep their digestive systems intact and maintain their health and vitality unimpaired, by recourse to a proper, regular and nutritive diet. The growing popularity of the book is discernible from the fact that it has already undergone thirteen editions and this is the fourteenth edition just published. The author has evidently taken immense pains in bringing out this volume without the omission of even the minutest detail and bringing it also up to date. The book deserves to be read by one and all.

TYPHUS FEVER.

By J. M. Michell, O. B. E., M. B., C. H. S.; I. N. Asheshor M.B., C. H. B., and G. P. N. Richardson B. M., C. H. B., Medical Officers attached to British Mission Hospital, South Russia, 48 Pages. Bailliere, Tindall and Cox, 8 Henrietta Street Covent Garden, London 1922.

This small handbook gives a brief account of the main features of Typhus Fever and discusses its relationship to the present condition of affairs in Eastern Europe. The subject is dealt with under the following headings: (1) Causation and Prevention of Typhus Fever; (2) Clinical Course of Typhus Fever; (3) General treatment of Typhus Fever; (4) Remarks on the Special Treatment of Typhus Fever and (5) Preventive Inoculation against Typhus Fever. As the book is written by officers who have great experience of this disease in South Russia, it deserves special consideration. We recommend the book to our readers.

TEACHER'S DIETETIC GUIDE.

Publisher A. F. Pattee Mount Vernon, New York—This is a very useful guide to teachers who, with the aid of this book, will be able to arrange for the necessary course of study in dietetics for the nurse. Question papers set in various Examination centres in the U. S. A. constitute the principal features of the book and will prove helpful to the nurse in preparing for the State Examinations. The book is given gratis with each copy of Pattee's Practical Dietetics and not sold separately.

AIDS TO PHYSIOLOGY.

By J. Tait, M. D., D. Sc. and R. A. Krause, M. D., D. Sc. II Edition Price 3/6 Pages 255. Figures 57. Bailliere, Tindall and Cox, 8 Henrietta St., Convent Garden, W. C. 2 London 1924.

This little book is written as an aid to the student who is presenting himself for the examination and who has also attended lectures and practical courses in experimental and chemical physiology in histology. This book does not replace the physiological text-book, lectures or practical work. In this second edition of the book important additional matters, such as '*Chemical regulation of Respiration,*' and '*Systematic Nervous System*' have been added. We recommend it to every student.

THE MOTHER CRAFT MANUAL.

By Mabel Liddiard, Published by J. A. Churchill, 7, Great Marlborough Street, London Price 3-6.

This book is mainly intended for the use of matrons and nurses who have taken up the noble profession of maternity and child-welfare work. It will also prove to be of immense help to mothers who have to undergo often the ordeal of child-bearing and rearing during their life-time to keep themselves and their offspring in a fit state of health and strength. The chapter on "Natural Feeding" is extremely interesting and instructive and will serve to induce mothers who wean their children the moment they are born and have recourse to artificial methods of feeding to satisfy their selfish propensities and mistaken notions of fashion to realize the need and importance of breast-feeding and the heavy responsibity of motherhood. We strongly recommend this book to every mother and to the nursing profession.

AIDS TO MEDICINE.

By B. Hudson, M. D., M. R. C. P. Third Edition 1921, 368 Pages. Bailliere, Tindall and Cox, 8 Henrietta Street, Covent Garden, London, Price 4-6.

This book is intended to supply the student with a book for revision purposes, of a convenient size, to carry about. This ought not to be used as a text-book and it will be of great help to final-year students to revise the whole subject in a few hours. The whole subject of Medicine has been compressed in this book. We are inclined to call it as a compressed 'tablet' on the subject of Medicine. This will be of immense use for those to whom it is intended. In the third edition, the chapter on the "more common skin diseases" has been added.

BOOKS RECEIVED.

The following books have been received and the courtsey of the publishers in sending them is acknowledged. Reviews will be published from time to time. [ED. ANTISEPTIC.]

The Manager of the Antiseptic will be pleased to supply the readers any books acknowledged hereunder, at the Publisher's price. When sending their order the readers are requested to send a remittance for the full value of the book. That a remittance in advance should be requested is no reflection on the credit of any reader of the Antiseptic, but is simply a condition necessitated by circumstances.

Local Anaesthesia Methods and Results in Abdominal Surgery.—By Professor Dr. Hanstinsterer, Surgeon in-chief Lienna Hospital of the Brothers of Charity, pages 349, with 2 illustrations. Rebman Company, Medical Books Ltd., New York.

Aids to Medical Diagnosis (1924) 3rd Edition.—By Arthur Whiting, M.D., Senior Physician to the Prince of Wales General Hospital, Tottenham. Fellowship of Medicine and post Graduate Medical Association. Bailliere Tindall and Cox, 8, Henrietta Street, Covent Garden W. C.-2. London Pages 177, price 3 sh. 6d. Rs. 3-1-0 postage Annas 6.

Notes on the Medical Treatment of Disease, for Students and Young Practitioners of Medicine.—By Robert Dawson Rudolf, C.B.E., M.D., F.R.C.P., 2nd Edition (1923). McClelland and Stewart. Toronto. Pages 486.

x-Rays Thin, origin Dosage, and Practical Application.—By W. E. Schall, B.Sc., Lond., F. Inst. P. John Wright and Sons, Ltd., Stone Bridge, Bristol. Pages 136. price 5sh. Rs. 4-6-0.

Practical Medicine Series Vol. I. comprising 8 Volumes on the Year's Progress in Medicine and Surgery.—Under the General Editorial charge of Charles L. Mix, A.M., M.D., General Medicine.—Edited by G. H. Weaver, M.D., L. Brown, M.D., R. B. Preble, A.M., M.D. B. W. Sippy, M.D., R. C. Brown, B.S., M.D. The Year Book Publishers 304, South Dearborn Street, Chicago. Pages 678, price 3 dollars Rs. 12.

Diagnostic Methods (1923). A guide for History taking. Making of Routine Physical Examinations and the usual Laboratory Tests necessary for students in Clinical Pathology Hospital interests, and Practising Physicians.—By Herbert Thomas Brookes, A.B., M.D., F.A.C.P., 4th Edition. C. V. Mosley Company, St. Louis M.O., United State, America Pages 107 with 52 illustrations, price 1·75 dollars Rs. 7-0-0 postage 0-8-0.

Symptoms of Visceral Disease. A Study of the Vegetative Nervous System inits relationship to Clinical Medicine.—By Francis Marion Pottenger, A.M., M.D., L.L.D., F.A.C.P. 2nd Edition. C. V. Mosley Company, St. Louis Pages 357 with 86 Text illustrations and ten colour plates, price 5·50 dollars Rs. 22 postage, annas 12.

Talks on Psychotherapy.—By William Brown, M. A., M. D., D.Sc., M. R. C. P. University of London Press Ltd., 17, Warwick Square, London, E. C.-4. Pages 96, price 2/6d. net Rs. 2-3-0 postage Annas 6.

Announcement Western School of Physiotherapy 6th Annual Session 10th April (1924). Bellerine and Little Theatre, Kansas City, Missouri.

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Do Bynol	„	2	0
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Do Castor Oil 0-10-0; 1-2-0 &	...	2	0
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Anzora Cream Small 1-4-0 Large		2	2
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Batliwala's Ague Mixture	„	1	2
Benger's Food Tin	...	1	0
Bisurated Magnesia 1-10-0	...	2	8
Do Tablet 1-4-0	...	2	0
Bovril 2 oz. Bot	...	1	2
Brand's Essence of Chicken Tin	...	2	2
Bay Rum 4 oz. Bot each	...	1	8
Bush's Solid Brillantine	...	0	14
Burgoyne's Chemical Food Bot	...	1	0
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Calvert's Corbolic Tooth Powder Small 0-6-0 Big		0	10
Cassel's Tablets Small 1-0 Big	...	2	4
Colgate's Dental Cream Tube	...	0	12
Celerina Bot	...	4	4
Chamberlain's Cough Remedy	...	1	0
Do Pain Balm	...	1	0
Clark's Blood Mixture	...	2	12
Cystopurin Tablets	...	1	4
Cuticura Soap Box	...	2	12
Do Ointment Tin	...	1	12
Cuticura Resolvent	...	3	4
Dakin's Chemical Food	...	0	14
Do Damiana Compd Pills	...	1	8
Do Damiana Elixir	...	2	8
Do Depilatory Powder	...	1	12
Do Easton's Syrup	...	1	12
Do Hair Dye	...	1	8
Deschien's Syrup of Hæmoglobine	...	2	12
De Jonghn's Cod Liver Oil	...	3	0
Doan's Dinner Pill Large	...	1	4
Dusart's Syrup	...	2	4
Dongre's Balamrit	...	0	14
Edward's Harlene 1-0-0; 2-0-0;		4	0
Elliman's Embrocation (Royal or Universal)	...	1	8
Ergo Apiol (Smith)	...	4	4
Esanofele Pills	...	3	2
Euthymol Tooth Paste	...	1	0
Evan's Lime Juice & Glycerine 4 oz.		0	14
Do Bon Bon	...	2	12
Eno's Fruit Salt	...	2	6

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Gonocure Capsule	...	3	8
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Do Santal Midy	...	2	4
Do Stramonium Cigarettes		1	0
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Hair's Asthma Cure	...	4	0
Hair Oil—Kesharanjan	...	0	14
Hall's Coca Wine 3-12-0;	...	6	4
Himrod's Asthma Cure	...	2	6
Hommel's Haemotogen	...	2	14
Horlick's Malted Milk	...	2	8
Huxley's Syrup	...	3	4
Do with Formates	...	3	6
Horsford's Acid Phosphate	...	1	12
Hydrogen Peroxide 4 oz.	...	1	4
Hewlett's Mix. Pepsinæ Co c Bis.		7	0
Do „ Hepatica	...		
Do „ Damiana	...	7	0
Do Liq. Santal Flava.	...	7	0
Icilma Shampoo Pow. Wet or Dry		1	8
Iodex	...	1	10
Iodogenol	...	2	0
Iodin Vasogen	...	3	0
Jwara Hari	...	1	0
Johnson's Baby Powder	...	1	2
Jame's Electro Tonic Pills	...	3	0
Kaminia Hair Oil	...	0	14
Kolyno's Tooth Paste	...	0	14
Kugiloids	...	3	12
Kutnow's Powder	...	2	12
Kaufman's Sulphur Bitter	...	3	12
Do Soap each	...	1	6
Krusben Salt	...	1	8

		Rs.	A.
Kananga Water	...	1	4
Kirby Pills No. 9	...	2	4
Lactopeptine Tablets or Powder	...	3	6
Lalor's Phosphodyne	...	2	12
Lysol ¼ lb. 0-10-0; ½ lb. 1-0-0 & 1 lb.	...	2	4
Little's Oriental Balm	...	0	14
Lactagol Small 2-0-0; Large	...	3	8
Lime Juice and Glycerine	...	1	0
Lavender Smelling Salt	...	0	14
Maltine Cod Liver Oil	...	2	4
Manola Wine	...	5	8
Martin's Apiol and Steel Pills	...	3	8
Mellin's Food Small	...	2	4
Mother Siegle's Syrup Small	...	3	8
Mek Robinson's Quinine Pills 5 grs. 100	...	4	12
Nestle's Food	...	1	6
Odol Small 1-6-0; Large	...	2	4
Oppenheimer's Cream of Malt with Plain	...	2	8
Do „ Cod Liver Oil	...	2	8
Do „ „ with Hypo	...	2	12
Do „ „ Creosote	...	2	12
B: Paltaniads	...	1	12
Ovaltine 1-2-0; 2-0-0;	...	3	8
Phospherine Tablets 1-0-0; 2-8-0;		3	10
Peps	...	1	2
Pear's Soap Box	...	1	4
Parishes Chemical Ford	...	1	0
Pain Killer	...	1	2
Pertussin	...	2	4
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EDITED BY

U. RAMA RAU, M.L.C.

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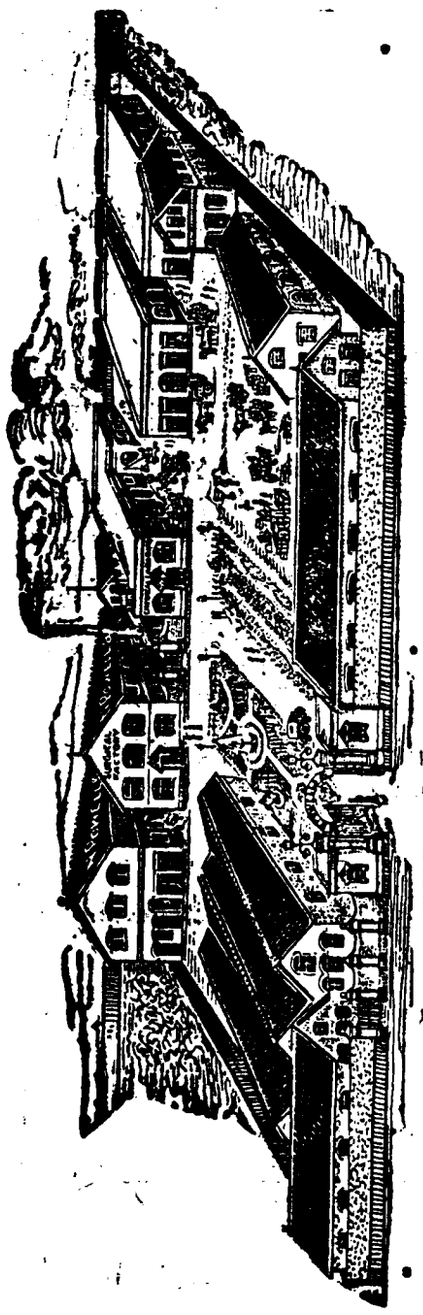

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*PUNCTURED ABDOMINAL WOUNDS

By

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Whether stabbing is as common in India and Burma as it is in the Shan States, is largely a matter of conjecture. We know that the Burmans are frequent offenders in this respect. In the Shan States (in this district) the chief culprits are the Chinese.

When a case is brought in, the first thing the surgeon must ascertain is whether the weapon has or has not penetrated the peritoneal cavity. If a very recent intra-peritoneal abdominal perforation is seen, the symptoms may be so few that any involvement of the peritoneum may be overlooked. As soon as possible the patient should be placed on the operating table and the abdominal skin painted with tincture of iodine. No other previous preparation is necessary or desirable. A careful examination of the wound should be made to see whether any viscus or omentum is visible, or whether there is a trickle of blood, or other fluid. A sterile probe should then be carefully passed in the presumed direction taken by the weapon which caused the injury. Great care should be taken lest the probe ruptures an intact peritoneum. Sometimes the probe will go in deeply by its own weight. Withdrawal of the probe will help in diagnosis—it is sometimes followed by a gush of blood or other fluid or it may be stained with faecal matter or bile. Sometimes although a probe is passed, it is difficult to tell accurately whether the wound is intra—or extra—peritoneal. In one case recently reported by us there was a small abdominal wound (caused by a

* Specially contributed to the Antiseptic.

broken bottle) which we had diagnosed as intra-peritoneal and which diagnosis was confirmed during the 2nd stage of anaesthesia by a small piece of omentum being gently forced out by the patient's struggles.

If it has been decided that the wound is only superficial and cannot possibly be intra-peritoneal, it can be treated in any common sense method. If it is doubtful whether the wound is intra—or extra—peritoneal, operate at once and decide this point by carefully enlarging the opening. If the wound has gone fairly deeply but has not involved the peritoneum it is usually best to open it up and cleanse it and then treat it by the open method, *i.e.* do not immediately suture. If the wound, however, is large in area, suture it but use a drainage tube. When it is clear that sepsis has been averted sutures can be applied, or the wound allowed to granulate. Immediate closure of a wound of this nature will probably result in abscess formation.

When the patient is seen several hours after the assault, his condition will usually tell the surgeon whether the abdominal wound is intra—or extra—peritoneal. The signs and symptoms of internal haemorrhage can be diagnosed without examining the patient's abdomen. The quick pulse, low in tension, the blanched condition of the patient, the anxious face, with beads of cold perspiration on the forehead, and the peculiar gasping respiration and the requests of the wounded man for water are very familiar once they have been seen. On examining the abdomen percussion will reveal fluid in one or both flanks, and the dulness will be shifting in character. If internal hæmorrhage is present it usually means that the stab has penetrated a solid viscuss, *e.g.*, spleen or liver or that some vessel, *e.g.*, in the mesentery, is bleeding. When a patient has a quick strong pulse, and his temperature is raised and any movement causes severe abdominal pain it suggests that a hollow viscus has been wounded and the contents of that viscus are irritating the peritoneum and causing exquisite pain. On examination signs of peritonitis are present—pain, tenderness and board-like rigidity, and the respiration is quick and thoracic in character; vomiting is a symptom, though it may not be an early one. It must be clearly understood that the greater the number of hours that have passed from the time of injury the more numerous and more severe will the patient's symptoms be, and the more obvious, therefore, the diagnosis. In an early case, however, the surgeon must not wait for confirmatory symptoms of internal hæmorrhage or peritonitis but should operate at once. It sometimes happens that although the wound is intra-peritoneal yet no viscus or blood vessel has been injured. The broken bottle case above referred to was of this nature. Text books usually mention that examination of the weapon and the depth to which it penetrated

will elucidate matters. Unfortunately, it is seldom that the assailant allows the knife etc., to be found; he never leaves it in the body of the patient and he certainly never sends it along later. We seldom, therefore, see the instrument used and it is usually our evidence which furnishes the police with a clue as to the nature of the weapon used.

So far only mention has been made of instruments or other objects assumed to be sharp or pointed. Bullet wounds, and wounds from high explosive shell casing also cause penetrating abdominal wounds. If there are two openings—wounds of entrance and exit—the path traversed can be judged. If there is only one opening and it is known that it is caused by a bullet, it is obvious that the patient harbours a foreign body. Although the weapon cannot be examined the patient can usually describe it and allowance must be made for exaggeration. His statement, however, is helpful at times.

The position of the wound will sometimes enable the surgeon to prophesy which viscus has been damaged. It is easy to make a mistake. We did a *post-mortem* on a man who, according to the police, had been stabbed in the heart. We agreed with the police. On investigation it was seen that the knife had penetrated the pericardial cavity but had just missed the heart; it had then gone through the diaphragm into the left edge of the liver, through the spleen and then into the stomach.

The previous condition of the patient's viscera may help the surgeon *e.g.*, an empty or full stomach or urinary bladder, a pregnant or non-pregnant uterus etc. Also, the previous pathological state of a patient may be interesting *e.g.*, a man with ascites or a woman with a multilocular ovarian cyst. By examination of the patient and by some account furnished by the wounded man or the police, the surgeon usually comes to some conclusion as to the nature of the wound and of the viscus which has been injured. In very many cases the exact viscus that is injured can only be ascertained on exploration and very often two lesions may co-exist. Thus a diagnosis of internal bleeding may be confirmed and a rupture of the small gut discovered as well, or *vice versa*.

Operation.—The site of the skin incision will be influenced by the diagnosis of the viscus that is injured, and by the position of the wound; if it is fairly certain that the spleen is the organ at fault a median incision with a horizontal one through the left rectus, or an oblique incision along the costal margin may be employed. As a general rule for all cases a middle line incision is to be preferred as access can be had to all parts, and as mentioned above in organs which may be difficult to get at through this incision an extension through the right or left rectus

can be made without fear of future hernia. In all cases, when making incisions, it is useful to remember that a live patient with a hernia is better than a dead one with a sound abdomen: and this remark also applies to the length of an operation. Do not hesitate to close the abdomen quickly with through and through sutures rather than risk the patient dying on the table. A hernia can be remedied, or later (next day, if need be) the wound can be properly closed.

When the abdomen has been opened, immediately examine the viscus nearest the wound before disturbing the other abdominal contents. If the weapon has gone in a slanting direction a probe passed along the track will point to some viscus which may be injured.

If the case is one of internal hæmorrhage a great gush of blood will obscure the operation field, the patient's condition may become suddenly worse at the release of pressure, and the site of the bleeding difficult to locate: and while the operator is groping in the confusion of blood and coils of intestines the patient may succumb. It is better to do something than watch the patient die and in this predicament the surgeon should remember what his previous diagnosis told him as to the viscus injured, and go straight for that organ and the artery that supplies it. In this district enlarged spleens amongst Chinamen are very common and wounds of this organ are fairly frequent. We have recently removed the spleen on two occasions where this organ had been stabbed and was causing profuse internal bleeding. Both men recovered and are still alive and well 7 and 5 five months later respectively. Sometimes internal haemorrhage is due to one of the visceral vessels that have been injured. In one case where we performed a post-mortem examination for the police, death was due to bleeding from the left gastro-epiploic artery; there was also a small wound in the stomach. This case was one of three Chinamen, all of whom had been stabbed by a Shan. Of the other two, one had an extra-peritoneal abdominal wound and the other a punctured wound of the thoracic cavity involving lung tissue. Both these men recoverd.

One case operated on at (unfortunately) a late stage for internal bleeding showed that the bleeding was from one of the branches of the superior mesenteric artery. This was ligatured but the patient survived operation by only a few hours.

In some cases it is astonishing how some viscera escape and how others are injured. It must be remembered that the small intestine is a fairly stout muscular tube which is freely movable and that a knife might not injure a coil of gut but may strike a blood vessel. In paracentesis abdominis the trocar if it impinges against a coil of gut usually pushes it aside without injuring it.

When the abdomen has been opened and examination in the immediate neighbourhood of the wound shows no lesion and the patient is not bleeding and there is no escape of contents which could furnish a clue, the surgeon must nevertheless exclude all other sources of injury. Sterile towels rung out in hot saline should be used for covering any exposed viscus. Starting at the duodeno-jejunal flexure, which can easily be recognised, the entire small intestine can be examined by letting it pass rapidly and lightly through the fingers, until the ileo-caecal junction is reached. A method which is not methodical is useless, as one loop may be examined several times while other loops are missed. During this examination tears of the mesentery will be noticed and should be sutured, as, later, coils of gut may become strangled on passing through these orifices. Once a tear in the intestine is discovered it should be sutured at once before further examination is carried out. If during this examination any other clue arises such as abnormal fluid of any kind the source of this must be located. After having examined the small gut the large gut can be easily and quickly examined. The stomach can also be examined fairly easily. Next, each lateral pouch should be examined for blood. By tilting the table at the foot and obtaining a modified Trendelenberg position the cavity of the pelvis can be examined. In this connection it must be remembered that wounds of the peritoneal cavity *via* the vagina and rectum occur. Moreover wounds of the peritoneal cavity by way of the pleural cavity and diaphragm can cause extensive injuries to abdmoinal viscera. We recently performed an abdomino-thoracic operation for a stab wound which had ruptured the spleen and perforated the stomach besides opening up the left pleural cavity and incising the diaphragm. The man recovered. (This case will be published separately). We have thus far generalised on the injuries which may occur to an abdominal viscus or blood vessels and will now deal in more detail with the various structures that can be injured.

Internal Haemorrhage.

Assuming that there are no intestinal contents, bile or urine, but only blood to be found, it will be necessary to find its source which may be located as follows (after Lejars):—

(1) An incomplete non-perforating rupture of the intestine or stomach.
(2) A rupture of the spleen, liver, pancreas or kidney.
(3) A tear of the mesentery or other meso-colon.
(4) A tear of the omentum.
(5) A tear of other peritoneal folds, *viz.*, gastro-hepatic omentum or gastro-splenic omentum.

(6) A large vessel, splenic or renal vessels, etc.

(7) A combination of some of the above.

The important point is to discover the bleeding point or points. Proceed as follows:—

(i) Mop up residual blood.

(ii) Envelop the mass of intestines in a towel (or large piece of gauze compress) rung out in hot saline.

(iii) Move the intestines to the right and examine the left lateral pouch to investigate the condition of the spleen, descending colon and left kidney.

(iv) Similarly examine the right lateral pouch and look at the liver, descending colon and right kidney.

(v) If the towel containing the intestines becomes stained with blood the bleeding may be coming from the mesentery or the wall of the gut itself.

(iv) Put up the patient in a Trendelenberg position, push the mass of intestines towards the costal margin and examine the pelvic cavity.

TREATMENT.

General.—This consists in giving an intravenous saline injection as soon as the site of bleeding has been found and haemostasis secured, or doing a blood transfusion if it is possible. As a rule there is no suitable donor. Hauke (Med. Ann. 1923, p. 432) suggests using the blood found in the patient's abdominal cavity, first citrating it and then giving it back to the patient intravenously. Hypodermic injections of digitalin and strychnine and intramuscular injection of Camphor may be given. The patient's head must be kept low and oxygen should be administered when necessary.

Local.—Consists in dealing with the bleeding point in such a way as to stop bleeding, as suggested below:—

1. Tear in the gut wall: Cobble up the rent in an efficient manner.
2. Rupture of spleen, liver, pancreas or kidney. The injury to the spleen is best treated by splenectomy. This is the safest procedure. In the case of the other solid viscera it is best to try and stop bleeding by suturing with catgut. Use stout catgut and take a deep and wide grasp of the tissue. Another method is to pack the wounds with gauze attached to artery forceps. This can be removed later; or excised pieces of fat can be packed into the wounded viscus. The kidney is best dealt with by turning the patient over on the sound side and placing a block under him and proceeding as for an ordinary operation on the kidney through an incision in the loin. In a stab wound, the kidney would usually be injured from the loin and the surgeon would start his operation there. In a gun shot wound, however, the kidney lesion might only be discovered on opening the general peritoneal cavity when there would undoubtedly be other viscera injured. The pancreas is best investigated by incising the gastro-hepatic omentum and suturing the wound in the pancreatic tissue. Garre, who discovered a complete division of the gland, a little to the left of the vertebral column sutured the two portions together by sutures passed through the capsule only and haemorrhage ceased.

3. Tears in the great omentum. The tears can be sutured, or if there is a large hæmatoma present resection can be performed and the proximal portion ligatured.

4. Tears in the mesentery, the transverse mesocolon or sigmoid mesocolon even if avascular need suturing. If a vessel is bleeding this must be ligatured. It must be remembered that if the mesentery is cut through close to its attachment to the gut this portion of the intestine will probably become gangrenous. There is a case recorded of a man who stabbed himself in the abdomen. Profuse bleeding occurred and there was traumatic hernia of the gut. Laparotomy was performed and only a wound of the mesentery discovered. The bleeding mesenteric vessels were ligatured. The patient died. At the post-mortem, gangrene of the intestine corresponding to the ligated vessels was discovered. It is necessary, therefore, to bear in mind that for a wound of this nature it may be incumbent upon the surgeon to perform prophylactic resection of the intestine.

5. Tears in all peritoneal folds should be sutured not only to prevent the present hæmorrhage (if any) but also subsequent internal herniae and obstruction.

6. Large vessels. The vessels usually injured are the mesenteric, splenic, renal. Wounds of the aorta or inferior vena cava will be diagnosed at autopsy. As regards the other vessels the operator has to use his ingenuity on the spur of the moment and if he cannot ligate the vessels he must attempt to clamp them or as a last resort pack with aseptic gauze. As mentioned before we have come across two cases of this kind, one being a mesenteric vessel and the other the left gastro-epiploric. Both succumbed rapidly after the injury was inflicted.

PERFORATING INJURIES OF THE ALIMENTARY CANAL.

Stomach.—We have encountered three cases of stab wounds of the stomach as already mentioned. Two were at police post-mortems, the other recovered. If the stomach has been wounded, this is noticed almost at once as undigested food will often be seen. Grains of rice are particularly noticeable. In one of our post-mortem cases the dead man had previously had a very large meal of rice and the peritoneal cavity was full of particles of rice. The tear in the stomach wall must be sutured with catgut in the usual way.

Small intestines.—The escape of contents from the small bowel is usually recognised by seeing an extravasation of yellow fluid. As mentioned before a systematic search must be made and each wound dealt with as it is discovered.

Large intestines.—In the case of the large gut, brown faecal matter with a disagreeable odour will indicate the lesion. For all wounds of the alimentary canal it is necessary to bring out the portion of the viscus concerned and to pack off the remainder of the abdominal contents. If the wound is a small hole use a purse string catgut suture and then bury this by over-sewing with interrupted sutures of catgut. Should the wound be a fairly long slit, the edges should be sutured together and this suture line must be buried: the second suture line should also be buried by a third layer of sutures. We had a case where the small intestine was ruptured by external violence and which was sutured in this manner. The man recovered although he was not brought to the Hospital till 20 hours after his injury. (This case has already been reported.)

In cases where there are numerous injuries in one section of gut it may be wise to resect that portion and do an end-to-end anastomosis.

Punctured wounds of the abdomen can also injure the urinary bladder, gall bladder and the pregnant uterus. We operated on a case where a man had been severely crushed about the pelvis and lower abdomen. On opening the abdomen it was seen that the pelvis had been extensively fractured and had perforated the peritoneal cavity. The neck of the urinary bladder had also been ruptured. The man succumbed to shock as the result of his numerous injuries. A stab wound of a distended urinary bladder will evidence itself by the escape of urine. The wound in the bladder will have to be sutured, the exact dimensions of the lesion being determined. Two layers of sutures are necessary. In the case of the gall-bladder if the wound is small two layers of sutures can be applied; where, however, there is extensive damage cholycystectomy is the best procedure.

Wounds of the non-gravid uterus by the abdominal route are rare. Several interesting cases of wounds of the gravid uterus are quoted by Lejars. We will quote one case *in extenso*;—

"A woman 33 years of age, and about 8 months pregnant, had shot herself in the abdomen with a revolver. The wound of entrance, about half an inch in diameter and blackish in colour, was situated about 2 inches to the right of the umbilicus; a slip of omentum was protruding, and yellowish, blood-stained fluid was escaping from it. On the left side, an inch from the anterior superior iliac spine, the bullet could be felt in the abdominal wall. The discharge of the fluid continuing and the foetal heart sounds becoming steadily weaker, operation was performed seven hours after the occurrence. Right lateral laparotomy! the peritoneal cavity contained only a small quantity of yellowish fluid stained with blood; near the fundus of the uterus, close to the attachment of the right tube, a wound about the diameter of the little finger was found and from it fluid similar to that found in the peritoneum was escaping. The uterus was brought outside the wound, and then a second wound similar to the first was found low down and to the left. The lower part of the uterus was firmly compressed and the organ was opened by a longitudinal anterior incision. The foetus and placenta were removed and after the uterine cavity had been cleansed, the incision was closed in two layers. The margins of the openings were excised and the openings sutured. No other intra-abdominal lesion was discovered. The abdomen was closed after provision had been made for drainage. The bullet, lying in the subcutaneous tissue, was extracted; it was of 9 mm calibre. The mother recovered. The infant lived for 52 hours; the bullet had struck it in the right groin and had emerged close to the vertebral column between the 10th and 17th ribs. At the autopsy, two fissures were found in the meso-colon, a wound of the ascending colon, a laceration of the right kidney, and a wound of the right lobe of the liver and of the diaphragm. (A case of M. Rondorf, reported in M.K.H. Fungling's thesis "Uber Verletzungen des graviden Uterus". Born, 1911). And here is another interesting case taken from Bonney and Berkeley's *Difficulties and Emergencies of Obstetric Practice* (2nd. Ed. P. 84) "A single woman, age 38, shot herself during labour. The bullet passed through the thorax, tore the diaphragm, pierced the stomach and lacerated the spleen. A dead child was delivered by craniotomy, the spleen removed and the diaphragm and stomach sutured. The patient recovered."

POST-OPERATIVE TREATMENT.

Assuming that everything has been dealt with in as satisfactory a manner as possible, it becomes necessary to close the abdomen and to arrange for post-operative treatment.

In closing the abdomen it will be necessary to provide for drainage. In this connection it is our custom to close completely the original incision

and to make a separate puncture for a drainage tube. Usually the patient is put up in Fowler's position and his pelvis is drained by a rubber tube inserted through a suprapubic opening. This is conveniently done before closing the abdomen by cutting down on to a finger guarded by an ordinary silver thimble. If necessary, drainage can be provided for in either flank as well. Where suppuration is feared it is best to suture the abdominal skin with interrupted sutures.

For cases where peritonitis is already present at time of operation or where this develops subsequently we very strongly recommend the continual rectal administration of hot saline solution (the "Murphy drip".) In conjunction with this, continual subcutaneous saline is given in the thighs, axillae or breast tissue. Lejars reports a case of his own where intravenous and subcutaneous saline infusions were given at the rate of about 5 pints per day. At the end of 9 days the patient had had about 50 pints. He recovered. Let the patient drink water. The administration of fluid is the most important form of treatment. The patient frequently sweats profusely. The rectal treatment if carried on continuously for 48 hours will often pull the patient through. In conclusion we would recommend the reader if he is further interested in this branch of surgery to consult Lejars' classical work. (Urgent Surgery, Vol. I by Felixa Lejars, (English translation by Dickie.) John Wright & Sons, Ltd.)

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* PROTEIN SENSITIZATION

By

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Charles Richet, in 1902, injected a dog with some poison extracted from the tentacles of actiniœ. This injection had no apparent harmful effect. Twenty-two days later he repeated the injection, using exactly the same dose, with the idea in mind of giving gradually increasing doses in the future, and thus produce a condition of prophylaxis in the dog to that particular poison. Much to his surprise, however, before he had hardly completed the injection, the dog was taken suddenly ill and died within thirty five minutes. As this condition was the exact opposite of prophylaxis, he christened it anaphylaxis. In other words, the first dose had sensitized the dog to that particular poison, and the second dose caused sufficient shock to produce death.

Animal experimentation was carried on by different investigators in many countries, and we have thus come to know that the

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interesting and varied phenomena of anaphylaxis are due to sensitization to some foreign protein. The first dose or injection of foreign protein which produces the condition of sensitization, is known as the sensitizing dose. Following the first or sensitizing dose, there is what may be termed an incubation period, of approximately ten days, during which the blood and tissues of the animal are endeavouring to form antibodies, in response to the stimulus of the foreign protein. Any further injections given during this so-called incubation period will have no effect other than to prolong the incubation period. This is just what we would expect, as the further injections at this time merely increase the amount of foreign protein, and therefore a longer time is required for so-called antibody formation.

At the termination of the incubation period, which corresponds to the completion of the formation of antibodies, there is undoubtedly an excess of antibodies thrown off into the blood and tissues. Should there be remain ing in the blood or tissues of the animal any of the foreign protein orginally injected, and not already disposed of by this process, the mere contact of a small amount of this foreign protein with the specific antibodies formed, would cause some anaphylactic manifestation at this time. This may furnish a plausible explanation for the serum rashes, which frequently appear some days after an injection of serum.

Anaphylactic manifestations vary in different animals, but generally speaking they are as follows: the animal appears restless almost before the completion of the injections; scratches at muzzle as if irritated; respirations are increased, and dyspnoea sets in; vomiting diarrhoea, with passage of blood; micturition; tetanic spasms; somersaults; paralysis; collapse; cessation of breathing; death.

A guinea-pig that has been sensitized to horse serum, will react to horse serum, but not to beef serum, and *vice-versa*. In other words, protein sensitization is absolutely specific. When an animal is injected with a sensitizing dose of some foreign protein, the form of anaphylaxis produced is known as active anaphylaxis. If some of the blood serum from a previously sensitized guinea-pig is injected into a normal guinea-pig, the sensitization to that particular protein will be transferred to the second animal, and an exciting dose of the specific protein given immediately to the second animal, will cause anaphylactic shock. This is known as passive anaphylaxis. The transference of sensitivity, from one animal to another, is of considerable clinical importance, considering the great number of blood transfusions that are being performed. Therefore, in addition to the routine examination (Wassermann, blood grouping, etc.) to which donors for transfusion are subjected, their history, with regard to any possibility of anaphylaxis, should be very carefully gone into and, if indicated, tests for protein sensitization should be made.

At this point it may well be emphasized that previous to the administration of diphtheria antitoxin, the patient's history should be carefully gone into, and if there is any evidence of sensitization, a test with horse serum protein should be performed, particularly if the patient is an asthmatic. Neglect to do this may result in severe anaphylactic shock, or even death.

Oscar M. Schloss, in numerous painstaking experiments on children, who had idiosyncrasies to various articles of food, brought anaphylaxis out of the field of animal experimentation, into that of practical clinical medicine. He was the first to establish that it was the protein in the food, that was the offending element, and that all the other constituents were harmless. Secondly, he proved that this idiosyncrasy, or hypersensitiveness, to some particular food protein, was absolutely specific. Thirdly, he demonstrated that the offending protein could be detected by the cutaneous test. Sensitization in human beings is known as allergy.

There is a condition which may occur known as anti-anaphylaxis. This means that following a toxic dose of protein which causes, for example, an attack of urticaria, there follows a period of anti-anaphylaxis or temporary desensitization, during which the skin test is negative, and the offending food may be eaten with impunity.

BRONCHIAL ASTHMA.

The revolutionary nature of this work may be appreciated when we stop to realize that, previous to the advent of protein sensitization, asthma was considered an incurable disease of unknown etiology. About one-half of all cases of asthma can be proven to be due to sensitization to some foreign protein. Asthma cases are therefore grouped into two classes; first, those which are found sensitive to some foreign protein, which are designated as true bronchial or allergic asthma; second, those which are not found sensitive to any foreign protein, which are designated as asthmatic bronchitis. The sensitive asthmatic can usually be completely relieved of all attacks by elimination of the offending protein or proteins from his diet or environment, by specific protein therapy, or proper vaccine therapy, or by a combination of these.

It is my opinion that a considerable proportion of the so-called non-sensitive or asthmatic bronchitis cases, are also due to sensitization to some foreign protein, or perhaps some non protein substance, and that we have merely failed to detect the offending protein or other substance. In justification, however, of the assumption that we have made a diagnosis by elimination, in these patients, of bacteria as the cause of their trouble, I might say that the majority of them can be relieved of asthma by proper autogenous vaccine therapy. The objection is frequently raised, that results in the vaccine treatment of asthma, are always due to non-specific protein therapy. If this were true, it would seem that large doses would be more effective than small ones, but I have repeatedly found the reverse to be the case.

Asthma may be due to sensitization to any foreign protein with which the patient comes in contact. The offending protein may enter the body by inhalation, ingestion, absorption or infection. Inhalation applies to the proteins of plant pollens, of animal emanations, such as hair, dandruff, feathers, wool, and of miscellaneous inhalants such as orris root, etc. Ingestion and absorption apply to food proteins. Absorption may also take place through the conjunctivae, nasal mucous membrane, or, in rare cases, even through the unbroken skin. Infection applies to bacterial proteins. This is a good place to emphasize the fact that bacteria may act in two ways: first, as a typical infection with the formation of toxins; and second, the patient may be sensitive to the proteins contained in the bodies of the bacteria.

TECHNIC OF CUTANEOUS TEST.

The diagnosis of the offending protein or proteins, in the individual case, is made by means of the cutaneous test, the technic of which is as follows: both arms of the patient are bared to the shoulder, and extended with the palms up, upon a table adjusted to the proper height. The flexor surfaces of the upper arms and forearms are then cleansed with 50 per cent alcohol. A series of linear cuts about 1/8 inch long are made with the tip of a fine scalpel. These cuts should be about 1 1/2 inches apart and should penetrate the outer layer of the skin, but not deep enough to draw blood, other than the merest trace, which is often unavoidable. I usually make eight on each arm, four above and four below the elbow. To each of these scarifications, with the exception of the one just below the elbow on each arm, which should be kept as controls, is applied a small quantity of purified powdered protein of the substances to be tested. To each of these is then added a drop of tenth-normal (0.4 per cent) sodium hydroxide to dissolve them and permit of rapid absorption. A drop of the solvent is also applied to each of the control cults. After thirty minutes, the proteins are washed off and the reactions interpreted.

A positive reaction occurs in from five to thirty minutes, and is indicated by a definite urticarial wheal about the site of the cut, at least ¼ inch in diameter, surrounded by an area of more or less erythema. Larger reactions than ¼ inch are denoted by a series of plus marks, and smaller ones are called doubtful. These doubtful reactions should not be

ignored, but should be looked upon as danger signals and repeated at some future time. In some cases a positive reaction is indicated by a large area of erythema, with no wheal formation. With bacterial proteins, there is still a third form of positive reaction, which appears hours later, the site of the inoculation being elevated, hot, inflamed, and slightly painful, having all the appearances of a mild infection. Unless attention is paid to these delayed reactions, a number of positive reactions will be missed. Occasionally, food reactions do not appear until several hours after the tests are made.

REPORT OF MY OWN CASE.

A recital of my own case is the best evidence that I have to offer of the great value of protein sensitization work. At the age of 6 years, my parents noticed that I had considerable difficulty in breathing. This was thought to be due to a pair of very large tonsils, which almost entirely closed the aperture in my throat. Tonsillectomy and adenectomy, were performed at this time, but my dysnœa persisted and was then recognised as bronchial asthma. From that time on I suffered more or less severely with frequently recurring asthmatic attacks. I scarcely knew the meaning of a good night's sleep and, at times, the attacks were so severe that I was unable to go to bed at all, but was forced to spend the night in a chair. I obtained temporary relief, during these attacks, by the inhalation of fumes from various preparations which I burned, containing nitrate of potash, stramonium, and belladonna. Whenever I had a cold, which was very often, I would be completely incapacitated.

My first real relief was obtained by my parents taking me to Atlantic City. I was having a very severe attack at the time, and my asthma left me almost immediately upon our arrival there, and I was entirely free from asthma the entire time we were there. Upon coming back home, my asthmatic attacks returned. This experience has been repeated innumerable times in my case *i. e.*, my asthma would always leave me promptly upon going to Atlantic City, but it would invariably return on coming back home. This was erroneously attributed to an unfavourable climate in Washington, because in 1913 we moved to a new residence in the same neighborhood, and my asthma left me entirely for two years, and then returned as bad as ever.

I took up the study of medicine, with the hope of finding a cure, but was discouraged by my professors telling me there was no cure for asthma. Examination of my heart, blood and urine gave negative results. My blood pressure was normal. Fluoroscopic examination of my chest was negative. I took potassium iodide, Hare's anti-asthmatic prescription, benzyl benzoate, and other preparations, internally, but with no results other than to cause a digestive disturbance.

I tried calisthenics, deep breathing, long walks, cold baths, sleeping outdoors, vegetarian diet and fasting, but my asthma persisted in spite of all. In an effort to obtain some relief from my suffering, I even resorted to osteopathy, then neuropathy, chiropractice, and finally Christian science, but they all proved dismal failures.

In 1919, while an intern in the Atlantic City Hospital, I heard and read something about protein sensitization work as applied to asthma. I obtained some twenty-five principal food proteins with which I tested myself, but they were all negative. When I returned to Washington, additional skin tests were made, and I gave a marked reaction to dog hair protein. I then went to Philadelphia and was thoroughly tested out and found sensitive to dog hair + + +, cat hair +, horse dander † and negative to all other proteins. Have since performed innumerable tests upon myself, with always the same results, thus convincing me of the absolute specificity of the work.

The explanation of my case is simple. At my former residence we always had a number of cats, which were the cause of my asthma at that time. My two years of freedom in Washington, from 1913 to 1915, were due to the fact that we got rid of our cats when we moved. Then some one gave us a dog, and this started my asthma again, as bad as ever. Going to Atlantic City merely meant getting away from cats and dogs. We got rid of our dog, and I treated myself with gradually increasing injections of dog hair protein, and since then have been entirely free from asthmatic attacks. After being a martyr to asthma for twenty-two years, I am now gloriously well. My own case is of special interest because it is one of the very few cases recorded in the literature in which dog hair protein gave the dominating skin reaction, or, in other words, in which the inhalation of the epidermal emanation from dogs was the chief cause of asthma. Most other cases which were sensitive to dog hair protein, were also more sensitive to the hair of other animals, such as horses or cats. This shows the absolute necessity of making a specific diagnosis by cutaneous tests before treatment is attempted.

To determine the degree of sensitivity of a patient, tests should be made with varying dilutions of the offending protein, *i. e.*, 1 : 100,000, 1 : 10,000, 1 : 1,000, and 1 : 500. Treatment should be started with the strongest solution which fails to give any skin reaction whatsoever.

Asthmatic patients should be tested routinely with all food proteins which enter into their daily diet, as well as with the hair or dandruff of such domestic animals as are about the home or place of occupation. Seasonal, or hay-asthmatics, should be tested with pollen proteins. Those asthmatics who are susceptible to colds, as well as those who do not react to any other form of proteins should be tested with bacterial proteins. The more proteins that are tried, the more certain one can be of the diagnosis, *i.e.*, that all offending proteins have been detected. I use some 240 different proteins, and am continually adding to this supply.

Comparison of Cutaneous and Intra-cutaneous Methods.

Some workers in this field, use what is known as the intra-cutaneous test in preference to the cutaneous test already described. In the intra-cutaneous method, minute quantities of the substances to be tested are injected into the layers of the skin, with a fine needle. I see no advantage to this method over the cutaneous one, and feel that it has a number of disadvantages.

The intra-cutaneous method: first, subjects the patient to a very trying ordeal; second, is difficult of interpretation; third, is non-specific at times, *i.e.*, gives a number of false reactions; fourth, is no gauge to the progress of treatment, *i.e.*, treatment sometimes decreases the size of the reaction, sometimes increases it, and it sometimes remains unchanged; and fifth, may give a very sore arm or even allergic shock in a very sensitive patient, especially if the needle should penetrate below the skin. On the other hand, the cutaneous test: first, is practically painless: second, is easy of interpretation; third, is absolutely specific; fourth, is an exact gauge to the progress of treatment, *i.e.*, treatment progressively decreases the size of the reaction; fifth, gives no sore arm or allergic shock, even in a very susceptible patient, as the protein may be washed off at any time, thus checking its action.

Hay-fever.

Another typical clinical manifestation of allergy, is seasonal hay fever, which is nearly always due to sensitization to the proteins of plant pollens, whereas non-seasonal or perennial hay-fever may be due to sensitization to any foreign protein. Seasonal hay-fever may be classified into early spring, late spring or summer, and fall types. Early spring hay-fever is not very commonly met with, and is usually due to sensitization to tree pollens. Late spring or summer hay fever is commonly spoken of as "rose cold", which is a misnomer, as most of these cases are due to sensitization to one or more of the grass pollens. Roses are insect pollinated, and do not cause symptoms except on intimate exposure, even in sensitive patients. The typical fall hay-fever season is from about the middle of August until the first frost which coincides with the period of pollination of ragweed, to which pollen practically all of these cases are dominantly sensitive.

Pre-seasonal treatment started far enough in advance of season to get the patient as completely desensitized as possible just before pollination of the particular offending plant or plants, is undoubtedly the ideal method of treating seasonal hay-fever. In those cases in which pre-seasonal treatment is incomplete, or in which there has been no pre-seasonal treatment, co-seasonal treatment is well worthy of trial. Pre seasonal treatment is given at weekly intervals, unless the time is limited, in which case the interval between treatments may be lessened, especially on the smaller doses. Co-seasonal treatment, on the other hand, is preferably given at irregular intervals, depending upon the duration of relief following the individual treatment.

I am absolutely opposed to the use of any stock mixed pollen preparations, such as are put on the market by a number of commercial houses, for either diagnosis or treatment. No patient should be treated with mixture of pollens, without first making a specific diagnosis as, by so doing, it is only guess work, and furthermore, we are liable to sensitize the patient to some new pollen to which he is not already sensitive.

The pollens are grouped biologically or botanically into a number of groups, *i. e.*, Gramineae, such as timothy, red top, orchard grass, June grass, sweet vernal grass, corn, rye, wheat, etc; Compositae, such as ragweed (dwarf), ragweed (giant), dahlia, sunflower, goldenrod, daisy, aster, etc.; Leguminosae, etc. The patient should be tested with the pollens to which he is exposed, and should be treated with the pollen or pollens which give the dominant reactions in any particular group.

Allied Conditions.

A considerable proportion of all cases of urticaria, angioneurotic edema, dermatitis, conjunctivitis, colds, bronchitis, and erythema multiforme can be proven to be due to protein sensitization. Urticaria, or hives is usually due to sensitization to some food protein. Eczema due to sensitization to one or more food proteins is very commonly met with, especially in infants and young children. Eczema or dermatitis, however, may also be due to contact of a sensitized skin with any type of substance. Asthmatic patients frequently give a history of eczema in early childhood. Several cases of dermatitis have been reported due to pollens. Conjunctivitis may be due to food sensitization. Colds and bronchitis are probably of two types, infectious and anaphylactic.

In addition to the conditions already mentioned, there are a number of other related ones, of unknown etiology, such as migraine, epilepsy, paroxysmal hemoglobinuria, psoriasis, Meniere's syndrome, etc., which may eventually be proven to be due to some form of protein sensitization, in fact, the evidence now at hand would seem to make a study of all such conditions incomplete, without careful investigation from this viewpoint.

*PNEUOMTHORAX-PLEURISY

By

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The well known Danish author, Gravesen, who was fortunate enough to be able to devote himself for nearly two years to the study of tuberculosis in Indian sanatoriums, gave a report lately of the experiences he had collected there in pneumothorax and other surgical methods, in the Indian Med. Gaz Bd. 58 Num. 11, 1923. I am especially glad therefore of the opportunity of expressing my opinion here, about a problem, which has interested me greatly for many years, namely the importance of pneumothorax-pleurisy. It deals with the people affected with lung tuberculosis, who were treated in my section partly as indoor patients and partly as outdoor patients for many years after they had left the hospital. The reason I consider my investigations of especial value is, because they were gained in a control, made regurarly on the same patients, which extended over several years, whereas otherwise very often only small portions out of the "decursus morbi,' can be notified. I will first of all, on the strength of the material gathered from more than 300 pneumothoraces artificiales, give an account of the different groups into which the various sorts of exudation may be classed, which developed in my patients as long as they were under examination and will then with a brief sketch of the modern ideas on the subject, explain my own views.

A. PNEUMOTHORAX—DURING CONTROL—WITHOUT PLEURISY. 22%.

This number is larger than it is in reality, as many cases had to be enrolled in this group which had only been watched for quite a short time, but which, later on, according to the general point of view, would probably develop an exudation. It includes also cases in which, for one reason or another, treatment had to be quickly brought to an end; for instance, because the tubercle had spread over to the other lung unexpectedly soon, or because—which rarely happened with me—the outdoor patients stayed

*Specially contributed to the Antiseptic.

away. From these cases it may be concluded that even extensive adhesions need not necessarily go hand in hand with an immediate formation of effusion. But emphasis must at once be laid upon the fact that the very cases, which showed an especially favourable result for same length of time, were the ones in which exudation developed during treatment. The length of control lasted in these cases from 1 month up to 2 years.

B. SMALLEST, FREE OF FEVER, BORDER EXUDATIONS IN PHRENIKOCOSTAL CORNER. 21%

The small exudations, which are located only in the corner of the ribdiaphragm are, with very few exceptions, always free of fever. They can only be ascertained with the help of Rontgen rays. They remain very often unchanged for years. The time of observation here was up to 3 years. But it is possible for them to appear very quickly and to disappear again just as rapidly. According to my cases, they may be absolutely favourably prognosticated. In my list they consisted chiefly of those, for which one was inclined from the very beginning to give a more favourably prognosis, on account of the whole position of the formation. We think we are not mistaken in associating these cases of the smallest exudations, respect their non-development into large effusions, with those examples of pneumothorax, which take a favourable course; Naturally it is never possible to say at the beginning, whether in the course of observation a small border exudation will develop into a large one or not. Sometimes, as many punctuations have taught us, these smallest exudations consist of pure blood and the only explanation to be found is, that the punctuating needle, when refilled must have pricked a blood vessel, which emptied itself at once into the hollow cavity of the pleura. If one wishes to puctuate these very small exudations, the exact spot to be punctuated must be first ascertained by Rontgen rays.

C. LARGE EXUDATIONS, FREE OF FEVER AND PARTLY NEEDING PUNCTUATION. 35%.

These large exudations, which take up at least a third to a half of the whole pleura space, either develop slowly out of the small border exudations or they form and increase very rapidly. They are generally free from fever. They may possibly entirely disappear quite spontaneously and not return, or they may show themselves again after a time and then increase so greatly, that it becomes necessary for them to be punctuated. The general health of the patient is not, as a rule, affected to any great extent, but he does not feel quite well. In all these cases the prognosis could only be made from the very beginning with a certain caution. I only know one case in which after many years of observation a partial cure could be said to have taken place. All the others, certainly only after the

lapse of years, ended badly. Here too the exudation signifies a complication already, whose end cannot be foreseen and over whose development we have no control. One of the main unfavourable characteristics of this exudation is an increased tendency to formation of thick skin. These thick skins may become dangerous in the course of the pneumo-thorax process by aiding the formation of adhesions on the one hand, and, on the other, by leading to a decided tendency to shrinkage in the Thorax half in question. Many authors have spoken of a plastic pleurisy in this connection and have meant thereby those types of disease, which become gradually *obliteratio pleurae*, through an inexorable adhesion formation, which no precautions were able to prevent, which then obliges the collapse treatment to be brought to a premature end-generally before the commencement of cure for lung tubercle. These complications in the pneumo-thorax treatment have lately been brought home to me in a very disagreeable manner, in the case of an outdoor patient. It was a question of an almost ideal pneumo-thorax indication ; on the left side an extended tuberculosis in an advanced stage and on the right side no certain evidence of anything. The collapse could be completely obtained. The patient improved very much in health. Then without any fever setting in, an exudation appeared which increased rapidly and very soon filled 2/3 of the pleura cavity. He was X-rayed and examined regularly about every 2 or 3 weeks, even during this period, in which, according to the universal opinion refillings are unnecessary. I did this for the express purpose of not by any chance missing the moment when a filling was needed. For we know, of course, that such exudations can re-absorb themselves remarkably quickly. In this case, however, despite all care, it was not possible to observe the right time punctually. One day the patient appeared again, the exudation had become absorbed and the pleura which hitherto had been entirely free, had become firmly fixed, and repeated efforts in different places to set the pleura in motion again were fruitless. The patient then became much worse and the whole splendid success at the beginning was lost through the appearance of the exudation with its accompanying symptoms. This is no exceptional case. I could tell of many others, but it is certainly the most impressive.

D. FEVERISH EXUDATIONS, WHICH LED TO SERIOUS DERANGEMENT DURING THEIR DEVELOPMENT = 20%.

The chief difference in all the cases classified in this group is, that, in contrast to the previous exudations, these are, without exception, always accompanied by fever, which is entirely a consequence of the formation of the exudation. Precisely in these feverish exudations there is an increased tendency to the abovementioned adhesions. It was quite extraordinary

in a large number of these cases, how the normal continuation of treatment, was hindered. In many of these cases one has the decided impression that the seriousness of the illness is caused by the appearance of an effusion. In cases where only a partial pneumo-thorax is possible on account of the adhesions, which existed before the treatment was begun, there is a distinct inclination to a considerable increase of these adhesions, after the appearance of feverish exudation. Here where the exudation is accompanied by fever, there is still more ample opportunity of observing the progress described in group C. of a pneumo-thorax which has become worse through exudation. Different other cases belong to this group, which will be recognized in minute description by every one, who has had to do with pneumo-thorax patients from their own practice. Outdoor patients, who have been refilled for months together and who have been subjectively perfectly well and able to do their full work, come suddenly and complain, that they are not so well the last few days, that they have had fever, which has never been the case before, that they have lost their appetite and feel altogether very unwell. Objectively these patients really do look worse than usual, they show at least sub-feverish temperatures, not seldom up to 39-40 celsius and have lost weight. Physical examination, however, does not show the slightest change in the former well-known condition. Above all, there is nothing, or at least nothing new, to be discovered in the other lung which had been sound up to now. It is only by careful examination with [illegible] rays, that the cause is disclosed, either the development of [illegible] exudation or the rapid enlargement of small ones, which [illegible] perhaps already existed for some time. In all the cases included in this group the feverish development of the exudation went hand in hand with a distinctly noticeable serious falling off in the general health, together with deterioration in the prognosis.

To say the very least, all that had been won up to now in difficult fight against the tuberculosis was lost for weeks and with the greater number it was quite impossible, even with the most careful nursing, to make up for this loss. Added to this all the possibility of further mischief exists for the patient in the eventual consequences, already fully described, which attend non feverish exudations, such as tendency to shrinkage, adhesion, *obliteratio pleurae*. I have had several cases of this class under observation in which directly after such a severe attack of pleurisy a lasting relapse set in, which ended infatally.

E. EMPYEMA 2%.

One can distinguish between two sorts of Empyema, (1) the gradual development of exudation into empyema, and (2) the violent, acute outbreak of the same. The former kind of formation may be a

matter of years and in connection with punctuation carried on for a long time may turn into phlegmon of the chest wall. The violent outbreak of empyema generally comes from matter having overflowed into the pleural cavity, in consequence of an injury to the lung, during the loosening of an adhesion, by the application or refilling of the pneumo-thorax. In both cases, there is an increase of temperature. The empyema invariably represents a considerable change for the worse in the prognosis, but at the same time, I learned by experience, that the first named manner of formation must not be looked upon as entirely hopeless .I have encountered empyema which have become absorbed without surgical measures, but then certainly enormous formation of thick skin and also contractions take place, which put an end to pneumo-thorax. In one such case I know there has been absolutely no falling off in the state of health since the development of empyema from exudations, which had existed for a long time before. The man worked very hard for years as smith in a factory.

So far the summary of my cases. One of the most important questions in pneumo-thorax pleurisy is the punctuation. We will consider this first. The present universal point of view is to leave these exudations as much undisturbed as possible and to punctuate only when there is a *indicatio vitalis*, with the exception of course of trial punctuation for the purpose of diagnosis. If it should be required, one ought at all events not to punctuate more frequently if the exudation refills quickly after the first punctuation. This is the course I have taken hitherto, but I have begun to doubt whether these measures are correct in individual cases, since meeting cases like that which I have described in detail above in group C. It is a fact, that the exudation robs us completely of the general view of what is going on under its cover in lung and pleura, in such cases as the one described. It is scarcely necessary for me here once more to emphasize, that every pneumo-thorax treatment must as a matter of course work hand in hand with a Rontgen apparatus. I even go so far as to declare, that I consider every refilling an error, if it has not been preceeded by X-raying I found, just in many cases, where I had made more use of Rontgen examinations than was absolutely necessary, that in spite of these investigations the renewed expansion of the lung, which led to indissoluble adhesions, had taken place under cover of the exudation without being noticed. I could only form a distinct picture of what had taken place, when the reabsorption of the discharge had sufficiently progressed for Rontgen examination to be able to distinguish between discharge and the newly expanded lung. And then unfortunately it was sometimes too late: *i.e.*, the adhesions were already so strong, that every endeavour to bring about a complete collapse met with an unbreakable resistance. In such a state

of affairs, the question is surely justifiable, whether more use ought not to be made of punctuation, when there are a certain number of exudations, despite the possibility of their refilling quickly. This specially includes all exudations, which are not free in movement.

Only a few words over what may be gathered from the study of literature about the current views respecting the frequency, aetiology and prognostic judgment of exudation in pneumo-thorax. In respect to the first question, it is probably universally recognized, that exudation represents the most frequent complication in pneumo-thorax treatment. The records of its appearance vary from 30—80%. Writers have not yet agreed over the question of aetiology of exudation. The most different kinds of arguments have been set up in connection with it; traumatic respectively chemical irritation of the pleura through the high pressure of the pneumothorax gas during the refilling, specific inflammation of the pleura through the leaving of adhesions by the refilling. In this connection, attention may be drawn to the theory of the Frenchman Bard, who explains every form of pneumo-thorax exudation, as the formation of the smallest pleuro-pulmonal fistulas in the course of treatment. But it must be pointed out at once, that this theory has no right to be accepted as a principle. The prognostic judgment is probably the least disputed side of the whole exudations chapter. Here both extremes are represented in their full contrast. On the one side, the appearance of exudation is welcomed, while, on the other, it is considered most undesirable and regarded as downright disaster for the patient.

To come now to my own conclusions. First of all as to the frequency of exudation. The marked difference even in literary records between the numbers noted, is to be explained in my opinion, from the small border exudations, which can only be determined by X-rays, having been partly reckoned in the statistics and partly not included. I consider this latter a fault. These small exudations must also be regarded as a reactionary process in the pleura, as is quite clear, for at any time these small exudations may develop into large ones. Consequently the small ones have the same right to be included in the numbers together with the larger ones. I am quite convinced, that every pneumothorax patient, with so very few exceptions that they need not be taken into consideration, develops a small or larger exudation at one time or other, as long as the treatment is being carried out, that one is quite justified in reckoning 100%. But this is to be sure assuming, that sufficiently lengthy and sufficiently thorough Rontgen examinations have taken place.

In respect to the aetiology of pneumothorax pleurisy, I now hold the view, that it is always the case of specific tubercle pleurisy. I believe,

that the irritation of the needle, of the gas, perhaps too the unpermitted high pressure may exercise some influence upon the formation, but that these irritations alone are not decisive, they can at most hasten their appearance. I have never yet seen an exudation in an unspecific pneumothorax: for instance in cases treated for bronchiektasy, which seems a corroboration of my opinion.

Before discussing the prognostic value of exudation I must go rather far back. To my mind the favourable view of the pneumothrax fluid which has preponderated for a long time, has its historical rise in the leading thought, which lay in the introduction of pneumotherax artificialis. Forlanini indeed built up his course of treatment upon the observation of the favourable influence of pleuritis exudativa upon lung tuberculosis of the same side. Hence the appearance of exudation was regarded as a favourable symptom in lung-tuberculosis. This supposition has one fault. The leading thought of the gifted investigators, who introduced Pneumothorax into the treatment of lung-tuberculosis, was neither the exudation as such, nor the pleurisy as inflammation, but their compressing components for the diseased lung. Therefore in the construction of the treatment, they did not create an exudation, which after all would have been possible, but they blew in nitrogen and with that achieved first a compression of the lung. I think it is quite time to give up the idea, that exudation is of itself beneficial, that it has a biological immune effect. Just in my own cases, I have watched very carefully to see whether it was possible to note a more favourable turn in the course of tubercle in those where exudation was found, than in those where the pneumothoraces was dry. But it was not possible. On the contrary, I found, that the dry pneumothoraces had a better prognosis. Pneumothorax pleurisy ought to be judged according to the proportion in which it stands to the ideal end of the collapse treatment. I understand an ideal termination of the pneumothorax treatment to mean, that the healed lung has expanded again completely and takes exactly the same part in breathing as it did before it was taken ill. In other words, it must be able to undertake once more the full functions of a sound lung. But the exudation offers very considerable, if not altogether insurmountable opposition to this. The prospects of attaining this ideal of pneumothorax treatment will become permanently worse through fluid. I need only refer to the above specified particulars about retraction, contraction, thick skin, obliteratio pleurae. These can all appear upon the scene with large exudation—to leave the small border exudations out of the question—whether their development has taken place with or without fever. That it is a matter of 57% of my material is an impressive proof of the importance of the whole problem. But this, after all, might be put up with, if

the exudations of the 2 last groups together 22% did not cause one very serious apprehensions. With them the inflammatory portion stands in the foreground. Here the immediate harm done by the violent outbreak must be taken into account, as well as the troubles of the first 2 groups, which lie more in the future.

I express here my decided opinion, that the formation of a larger, especially of a feverish exudation during a pneumothorax is the grave complication of the treatment, in comparison to which even the much feared gasembolism falls into the background. The gasembolism—of which I have only seen one fatal case, which was caused by a technical error on the part of the assistant and might have been avoided—impresses chiefly by the suddenness, with which it takes place, like a bolt from the blue. The impression made by pneumothorax pleurisy on the superficial researcher is small in comparison, for its consequences as a rule only become visible after some period of time but are then all the more determinant for the progress of the disease. The insidiousness of pneumothorax pleurisy is, that it is quite an impossibility to pre-see whether a more or less harmless symptom may not turn from one day to another into a serious danger for the patient, the consequences of which cannot be foretold. The assertion, that a larger exudation is advantageous, because one is then not obliged to refill so often, is only correct in the case of effusions which move freely and which are comparatively less frequent but, to my mind, it is a great danger, both to patient and doctor, for it may then be thought unnecessary, especially he be an outdoor patient, to make him present himself so frequently for further examination. But if this be done, one will alas very soon be disappointed to find that a surprisingly rapid resorption has suddenly taken place, together generally with an adhesion, which compels the treatment to be prematurely brought to an end. The small border exudations are comparatively more harmless, but they too require careful watching, as at any time they may develop into a larger one.

Although my own experiences have led me to the above conclusions about pneumothorax pleurisy, I do not mean to say anything against pneumothorax itself, for its splendid efficacy in suitable cases is indisputable. But exactly in respect to the indication for the pneumothorax treatment this judgment of the fluids is extremely important. In accordance to the attitude of the times, one would exclude light cases, which have a chance of being healed by a cure in a sanatorium, from pneumothorax treatment at first and only make a trial with collapse treatment when several months' stay in a sanatorium has brought no benefit. For we must bear in mind every patient subjected to pneumothorax is exposed to possibly serious complications, arising from exudation, against which up to now we

have no means of protection and which may have a determining influence on the course of the tuberculosis, and therefore on the life of the patient entrusted to us. And this view of the exudation question tells us something else. It warns most emphatically not to carry out this treatment on outdoor patients; I mean with the transportable apparatus, which has been so highly commended in international literature of late. Such a proceeding is unwarrantable, as long as there are no transportable Rontgen apparatus, except in very rare individual cases. Rontgen apparatus and pneumothorax treatment belong inseparably together and the reputation of the lung collapse and the confidence placed in it will sustain a great blow, if this point of view be deserted.

CASES AND COMMENTS.

APHORISMS

By

A. THEODORE BRAND, M. D., C. M.

Urticaria will almost invariably yield to the patient use of an alkali and quinine.

The special features of syphilitic eruptions are asymmetry and polymorphism.

The diseases and disorders of advanced life are intimately linked with imperfect blood-depuration.

All pyrexial states in old people are apt to set up a typhoid condition, because the kidneys are unequal to the task of depurating the blood.

In the typhoid state never use depressing antipyretics, *e. g.*, the coal-tar derivatives.

Free action of the bowels should always be maintained in scarlet fever. Dr. Mahomed has shown that the occurrence of albuminuria is generally preceded by a state of high arterial tension which can be relieved by aperients.

A normal temperature may be present in diphtheria and pneumonia.

In typhoid fever occurring in children, the temperature may be normal or subnormal in the morning (hence the synonym "infantile remittent fever").

Whenever more than one lobe of a lung, in acute croupous pneumonia, is involved, the crisis may be delayed until the twelfth or thirteenth day.

Oedema of the chest wall in the presence of pleuritic effusion is a diagnostic sign of the effusion being purulent.

A high temperature cannot be relied upon to decide the diagnosis between inflammatory and malignant disease.

Serous inflammations in children are more liable to proceed to suppuration than in adults.

Never give an enema in a case of intususception where there is a history of "Consumption of the bowels".

If a child with any abnormal dulness at the base of a lung cries loudly, the disease is almost certain to be pleurisy.

An attack of convulsions in a child, accompanied by a small pulse and hiccough, is pathognomonic of worms.

In case of a solid tumour in the iliac region in a male, never omit to examine the scrotum for both testes.

In affections of the kidneys, pain may be felt only, or chiefly, in the bladder and urethra.

In intestinal obstruction, the cessation of pain and stercoraceous vomiting (the constipation being unrelieved) is neither a reason for delay in operating, nor does it render an operation less urgent.

In mastoid inflammation danger to life is inversely proportional to the actual evidences of inflammation.

Epididymitis and gleet are sometimes found without having a urethral, far less a sexual, origin. They may be caused by tubercle or trauma.

Purgatives should not be given in cases of scalds or burns, because of the possible presence of duodenal ulceration.

If persistent vomiting occurs in a non-pregnant woman, especially a young one, the most likely cause is ovarian. The same applies to indigestion in women, particularly if the tongue is clean.

Septic mischief may be present in the uterus of a puerperal woman, notwithstanding the absence of any offensive discharge.

The absence of amenorrhœa does not exclude extra-uterine pregnancy.

When plugging the vagina, never omit to make sure that the two natural reservoirs are empty; otherwise severe pain is likely to follow.

Never apply cold to a joint which is affected with acute gout.

When both eyes are affected with iritis the cause is most likely to be syphilis.

Whenever dilated pupils are observed in old people, glaucoma should be looked for.

In young men complaining of epigastric pain, it should be borne in mind that masturbation or excessive venery may be the possible cause.

Amonarthritis in a young man is almost sure to have a gonorrhœal origin.

Allingham remarked that he had seen dozens of cases where the only manifestation of syphilis was to be found in the rectum.

In the treatment of syphilis the patient must be maintained at the highest possible degree of health.

Willan Parker said: "if the patient exorcises the two devils of rum and tobacco, I will exorcise syphilis."

Whenever syphilis appears in a infant within the first two weeks of life, it is almost invariably fatal.

No infant is too young to be affected with tubercle.

One of the first signs of tuberculosis is the acceleration of the pulse from half a dozen to a dozen per minute.

Bulimia in advanced phthisis is a symptom of the worst omen. In such cases give opium.

Never forget to examine the apex of a lung suspected of infection by tubercle, in the supine as well as in the erect position.

Peri-umbilical erythema is a pathognomonic sign of tubercular peritonitis.

Long syncopal attacks in middle-aged persons, who feel well in the intervals, are almost always due to aortic stenosis.

In cases of persistent vomiting, or in persistently recurring boils and carbuncles never forget to examine the urine—in the former case for albumin, in the latter for sugar.

An abscess may be latent in the brain for many months. Acute symptoms may then suddenly set in, and the patient die in a few days.

The same sequence of events may occur in the case of cerebral neoplasm.

In cerebral growths, the seat of headache aids us very little in their localisation, as tumours in almost any region of the brain may produce beadache in nearly every situation.

Gradually developing hemiplegia is oftenest due to a cerebral neoplasm.

Hemiplegia caused by uraemia, or transient angioneurotic spasm of the cerebral vessels, occasionally occurs.

Bilateral pains in the legs should lead to an immediate examination for the presence of locomotor ataxy and diabetes.

Always place a person in uraemic coma in the lateral position.

When a fracture occurs from a slight cause in an elderly or middle-aged woman, scirrhus of the mamma will often be found to be present.

Never completely empty the bladder by catheter in acute retention due to prostatic hypertrophy.

Never forget the possibility of a distended bladder in any case of abdominal pain.

Daily evacuation of the bowels is desirable in all inflammatory processes. It is a *sine quo non* in the successful treatment of acute septicaemia.

Retraction of the head in case of cranial injury is diagnostic of implication of the base of the brain.

Whenever arsenic is being administered for a considerable time, be on the outlook for sneezing, lachrymation, sickness, and pain in the epigastrium, these being the first symptoms of arsenical poisoning.

In every case of apparently spontaneous left-sided empyema, never forget to think of the possibility of the presence of gastric ulcer.

Profuse hæmatemesis in a young patient may occur in the absence of gastric or duodenal ulcer, being due to vasomotor paralysis of the gastric vessels.

In a case of urethral stricuture, never rest content until you have passed into the bladder as large a catheter as the meatus will admit.

Fæculent vomiting occurs more commonly than is supposed in cases in which no mortal disease is present.

In cases of abdominal disease or injury, fæculent vomiting does not necessarily call for surgical intervention, unless it is accompanied by abdominal distension.

After injury to the back, if there be the least indication of interruption of bladder power, or if there be ever so little tingling about the hands, feet, or trunk, such a case should be treated at once as serious.

Cold effusion over the spine is very beneficial in chorea.

The backbone of treatment in acute septic conditions is rest and hot dressings.

Retraction of the nipple may take place in cases of congenital abnormality, as well as from old chronic inflammation or abscess.

A deep-seated carcinoma in a large breast may produce neither dimpling of the skin nor retraction of the nipple.

Never forget that subcutaneous œdema may be due to peripheral neuritis.

Never forget that in the case of young women with gastric disturbance the cause of the trouble may be early pregnancy.

A hard nodule under the body of the lower jaw may be a submaxillary salivary calculus.

Sleep posture may indicate a movable kidney with an aching pelvis if the painful side is slept upon, or an inflamed fixed cortex if the painful side is avoided.

If the patient is forced to sleep on the aching side, the kidney is still movable and the pelvis is locally irritated.

If the patient must rest on the unoffending side, the aching kidney is fixed, and its surface is inflamed (corticitis).

One of the first symptoms of return to health after the removal of a stone from the kidney is that the patient can sleep easily on the unoffending side.

The characteristic sign of convalescence after a sharp attack of coli-bacillary nephritis of one kidney, in which, of course, the cortex has been involved, is that the power returns of sleeping on that kidney.

Pericarditis is invariably accompained by loss of abdominal respiratory movement.

The determination of the fact in joint disease that there is no atrophy of the muscles is a great help in the diagnosis, showing that there is no serious joint lesion.

INCREASING DEAFNESS IN ELDERLY PEOPLE

By

ALBERT A. GRAY, LECTURER ON DISEASE OF THE EAR, GLASGOW UNIVERSITY.

In "Rabbi Ben Ezra" Browning's picture of old age is much too optimistic. On the other hand, the Preacher in the twelfth chapter of Ecclesiastics is unnecessarily gloomy, as when he writes "all the daughters of music shall be brought low." Deafness is, nevertheless, one of the most common, as well as one of the most distressing accompaniments in the later registers of life; and it is the physician's duty to find out if anything can be done to alleviate it.

CRITERIA OF SENILE DEAFNESS.

The first and most important step is to make quite sure that the patient is really suffering from senile deafness. In my experience the most common and most serious mistake is in making the assumption that because an elderly person is becoming deaf, the case is one of senile deafness. This mistake occurs the more frequently because the assumption has usually been made by the patient himself and by his friends. As a matter of fact, Eustachian and middle-ear catarrh are by no means uncommon in elderly people, and such cases may obtain very great relief by treatment.

The *age of onset* varies within comparatively wide limits. Senile deafness may begin as early as 60, or even before, or it may not make its appearance until 80. The onset is always gradual. A curious feature of the condition is the fact that the loss of hearing begins at the upper end of the musical scale, while the hearing for notes of low pitch is retained for a long time. Thus, frequently the first indication the patient has of his deafness is his inability to hear singing birds, especially the lark; whereas for the ordinary affairs of life, such as conversation, his hearing is as good as it ever was. As time goes on, however, the hearing power for the lower notes becomes affected and the deafness then becomes a serious trouble in the patient's life.

Absence of Tinnitus and Vertigo.—In uncomplicated cases of senile deafness the sufferer is almost always spared from the added burden of tinnitus or noises in the ears or head. This is a common and sometimes the most distressing symptom of ear disease, and it is perhaps remarkable that it is not an accompaniment of senile deafness. It must be remembered that tinnitus may occur in old people who are at the same time deaf. But here it will usually be found that the deafness is not of the uncomplicated senile type, but is associated with some other condition, such as the later stages of oto-sclerosis, which has been in existence long before the patient became old. It may also be due to arterial changes in the blood-vessels supplying the labyrinth, as in arterio-sclerosis.

The sufferer from senile deafness is fortunately also spared, as a rule, from another common symptom of inner ear disease, vertigo. When this symptom is present the case is not one of uncomplicated senile deafness, but rather one of internal ear disease due to some constitutional condition such as arterio-sclerosis, or to some local change such as the deposition of calcareous salts in the vestibule or in the ampullæ of the semi circular canals.

RULES FOR DIFFERENTIAL DIAGNOSIS.

The diagnosis of senile deafness is not difficult in uncomplicated cases if the physician will take the trouble to follow a few simple rules. On inspection through the aural speculum the presence or absence of wax in the meatus, or of the existence of suppurative middle ear can be determined. It is not uncommon to find milk-white deposits of calcareous salts in the tympanic membrane of elderly people; and, indeed, they are sometimes found in younger individuals. They cannot be looked upon, however, as being the cause of deafness, for they may be found in individuals whose hearing is not appreciably affected. Their occurrence should be remembered by the physician, because if the tympanic cavity be inflated too violently, either by means of the catheter or the air douche, the sharp edges of the crystals may tear the membrane and give rise to a

perforation. Fortunately, such perforations heal rapidly provided antiseptic fluids or applications are not introduced into the meatus. Inspection may sometimes reveal the presence of indrawing of the membrane. But too much reliance must not be placed upon the position of the handle of the malleus, since this varies within fairly wide limits in individuals possessed of normal hearing. The same is true of the degree of opacity of the membrane, for this also varies greatly in normal persons. As already stated, elderly people suffer in particular from a loss of hearing for notes of high pitch. This is tested for by means of Galton's whistle. The hearing power for the low notes is ascertained by the employment of deep-toned turning forks, as these are the only instruments which give notes sufficiently free from overtones to be reliable. If the case is one of uncomplicated senile deafness in the earlier stages, the physician will be surprised how comparatively well these low notes are heard. In the late stages of senile deafness the patient loses the hearing for all notes unless they are sounded loudly.

Testing the hearing by bone-conduction is frequently of use in establishing a diagnosis. In cases of middle-ear deafness the patient hears the sound of a turning-fork when held with its stem against the mastoid process, as long or longer than normal individuals. Where the deafness is due to internal ear disease *e.g.*, senile deafness—the fork when held in the position described is heard for a shorter time than is the case in those possessed of normal hearing.

Inflation of the Middle ear.—But by far the most important of the tests is that which is concerned with the effect of inflation of the middle ear. Not only is this a most important diagnostic matter, but it is at the same time an indication for treatment, and, in some cases, the most important means of treatment. Inflation of the middle ear, therefore, must be performed methodically in all cases. The procedure is as follows. Before inflation the hearing distance for the watch, the whispered voices, and the conversation voice must be determined and noted. Inflation of the middle ear is then undertaken. This must be done by means of the Eustachian catheter and with one end of the auscultation tube in the external meatus of the patient and the other end in that of the examiner. On no account must the physician trust to the effects of the air-douche associated with the simultaneous swallowing of a mouthful of water. Nor must he rely on the statement of the patient that "he has felt the air go up to his ears". The clear, unmistakable rush of air into the middle ear must be heard through the auscultation tube by the examiner who must not rest satisfied until this occurs. Having assured himself that the middle ear has thus been thoroughly inflated, the hearing distances for the watch, the whispered voice and the conversation voice are again tested by the examiner, and

the results compared with those found before inflation. If a definite increase in the hearing distance is found, then there is no doubt that the deafness is due, in part at least, to middle-ear disease; though, of course, disease of the inner ear may also be present.

INDICATIONS FOR TREATMENT.

The indications for treatment depend for the most part upon the result of inflation of the middle ear. If distinct improvement has occurred, then it will usually be found that some affection of the nasal cavities is present, such as chronic nasal catarrh, polypus, hypertrophy of the turbinated bodies, etc. These conditions must be treated by cauterising or by removal, as the case may be, but common-sense must be the physician's guide in this matter, and he must remember that the treatment must not be too heroic in old people. In mild cases simple treatment by sprays such as menthol in parolein (5 per cent. solution), etc. are sufficient. When the nasal condition is rectified so far as possible, the middle ear should be inflated by the catheter two or three times a week so long as improvement continues, which may be for several weeks. When no further improvement occurs, the treatment should be stopped for the time being It will frequently be found, however, that the dulness of hearing gradually returns. In such cases the inflations must be repeated every few months; the possession of their hearing means so much to them that elderly people are not willing, but anxious, to have the treatment repeated. If, on the other hand, no improvement results from inflation of the middle ear the first time it is carried out, then nothing can be hoped for from that treatment by repetition. That is to say, if any benefit is to be derived from inflation it will be obvious from the first. In cases where no such improvement occurs the deafness is due to inner-ear disease, or less likely, to a middle-ear condition which cannot be remedied. In old people it will usually be due to true senile deafness. In these cases little can be hoped for by any lines of treatment directed locally to the ear. The most that can be done is to try, by improving the general constitutional condition, to prevent the deafness from becoming worse, or at least to render its progress as slow as possible. If any local centres of septic infection are present, such as cystitis associated with enlarged prostate, these would naturally receive attention. Abundant hours of sleep should be advised, but these should be procured without resort to hypnotics, which usually have a bad effect upon the hearing.

Severe tinnitus is fortunately not common in the aged. When present, it is a most difficult condition to treat, and gives rise to great distress. The administration of bromides, at bed-time particularly, is quite permissable in these cases, because the patient would rather be free of the tinnitus even

though the treatment involved some increase in the deafness. Furthermore, the tinnitus when severe is apt to interfere with sleep, and when this is the case a suitable hypnotic is desirable.

ARTIFICIAL AIDS.

When relief is not procurable by the means described above, the question arises whether benefit may be obtained by the use of one of the artificial aids to hearing. In regard to this matter, experience shows that so long as the deafness is slight in degree the patient prefers to do without these instruments. With increase of deafness, however, many sufferers find them of great benefit, and are willing to make use of them. The kind of instrument to be recommended varies according to the degree of deafness. In cases where the deafness is great, then it will be found that the most useful types of instrument are those devised upon the principle of the telephone or microphone—*e.g.*, the acousticon or acoustique. The chief objection to these instruments is the jarring brassy tone which they impart to the voices. So much is this the case that some individuals refuse to make use of them under any circumstances. For these sufferers the simple old-fashioned ear-trumpet is often quite effective if the deafness is moderate in degree, but is of little use in cases of great deafness.

KALA-AZAR

By

DR. A. K. SIRCAR, M.B., D.P.H., DISTRICT MEDICAL OFFICER OF HEALTH, FARIDPUR.

(Continued from page 149 of March issue.)

Diagnosis continued :—

(g) *Examination of blood films from peripheral blood* :—

Leishman Donovan Bodies have been found in almost every part of the body according to the study of the Parasilologists and this is the natural consequence of their presence in the peripheral blood but their seats of selection are the bloodforming organs—the spleen, the lever and the bone marrow. The only certain method of diagnosis is to find out the parasite in the blood film.

The presence of parasites in the peripheral blood has been reported by Donovan in fairly acute cases of Madras. Working in the same presidency Patton claims to have found it in nearly 100% of cases of untreated Kala-Azar. But in order to attain this high percentage, he found it necessary to examine a large number of films from each case. Mackie, while working in Assam, reported parasites in the peripheral blood in 20% of cases without a very exhaustive search in acute cases. Sir Leonard Rogers notes that in

the very chronic cases seen in Calcutta and in Bengal Districts a number of competent observers have failed to find the parasites in the film of peripheral blood in the great majority of the cases and he has personally found this method of very little diagnostic value there. Mackie also gave up this method of diagnosis in Lower Bengal owing to its being very rarely successful there although valuable in Madras. Drs. Napier and Muir while working in Bengal have observed that parasites in the peripheral blood are extremely difficult to find. Recently they have been able to show that by a more careful examination it is possible to find parasites in the peripheral blood of about 20% of cases in Calcutta. They have reported that the flagettate form of the parasite is never found in the human body or in that of any worm blooded animal, the round form only being seen. Fortunately it has been very recently announced by Dr. J. N. Naitra, M.D., Teacher of Pathology, Campbell Medical School, that he has in the course of his routine work formed flagetted bodies in the blood film of a case with enlarged spleen and lever.

How to examine the film? An ordinary blood film, made in such a way that the majority of the leucocytes are drawn into the tail and of the film and should be stained with Leishman's stain and examined with an oil emersion lens and a low powered eye-piece (No. 1 or 2). The edges of the film only should be searched, as in this case a good deal of time is saved. The parasites will be always found in this case to be intracellular. Occasionally, however, a large cell may be ruptured in the act of making the smear and in this case the parasites will naturally be found lying extra-cellularly.

It is stated that by administering 1 c. c. of Liquor. Adrenalin subcutaneously half an hour before taking the blood films it has been claimed that it is easier to find the parasites.

(h) *Culture of peripheral blood* :—

By making a culture of the peripheral blood of a Kala-Azar case, the presence of the parasite can be demonstrated in 100% of untreated cases and also in a number of cases getting a considerable amount of treatment.

A few cases have been reported to be completely cured of the disease as they had been free from symptoms for a number of months but the parasite was grown from the peripheral blood of such patients. It can therefore be assumed that such patients have become chronic carriers of the disease.

(i) Examination of films and culture made out of puncturing the *liver*, the spleen : 2. Finally the lever or the spleen may be punctured with *canlom* for diagnostic purpose. The film prepared from the blood brought by puncture when examined by *microscope* should not be taken as final. A

culture of spleen pulp should be made on M. N. N. medium. A satisfactory spleen puncture culture that has remained sterile for 2 weeks may be regarded as negative.

Differential Diagnosis :—

I. First of all we must exclude Malaria.

(1) Clinically from acute Malaria.

(a) The characteristic paroxysmal nature of the attack with rigor of Malarial fever is sometimes present in Kala-Azar, but that is not the typical malarial ague and is usually followed by sweating.

(b) The patient of Kala Azar is often unconscious of the fever when it is as high as 103, but this is usually perceptible in ordinary malarial case.

(c) Suitable doses of Quinine by mouth or by intramuscular injection give speedy reaction in the case of acute malaria but rarely any effect or no effect can be obtained in a case of Kala-Azar.

(2) From Malaria Cachexia :—

(a) The paroxysmal nature of the malarial attack may not be present or may not be so well marked as in the acute form but other differential points mentioned in the book hold good.

(b) The steady increase in the size of Kala-Azar spleen with soft consistency against the hard Ague cake spleen with the enlargement during the attacks and decrease during the remissioned period, is characteristic.

(c) The duration of the disease is seldom more than two years in Kala-Azar with remittent temperature after apyretic periods, is a distinguishing point.

(d) The rapid pulse of Kala-Azar which remains so even after the apparent disappearance of fever for a considerable period is also characteristic of the disease.

(e) Gingivitis and cancrumoris etc, complications are more common in Kala Azar.

(f) Blood examination shows the following points in favour of Kala-Azar :—

(I) The causative parasites of either disease help in the diagnosis of that particular disease but does not exclude the possibility of the presence of the other disease.

(II) A leucopenia will usually be present in malaria but an extreme leucopinia of under 2000 without an equal decrease in the red cells is a point in favour of Kala-Azar. The relative decrease in Polymorpho nuclears and eosinophiles are also contributory points in favour of the same. An extreme anaemia is generally observed in Malaria.

(III) *The aldehyde reaction* :—A slight degree of opacity and sometimes solidification of the serum occurs in malaria but if the complete solidification forms within 5 minutes unless the Kala-Azar is of recent origin, it will in most cases clear the dignosis.

(IV) *Spleen puncture* :—If the dignosis still remains uncertain this method may be very cautiously done. Malarial parasites as they are seen in the peripheral blood rarely can be found in the spleen material but the presence of a large amount of malaria pigment and occasionally cresents naturally leads to the dignosis of the disease, but it does not exclude the possibility of co-existing Kala-Azar. The demonstration of the Leishman Donovan body in the smear from the blood taken from the spleen in pulp speaks of the sure dignosis of Kala-Azar.

(V) *From Typhoid fever* :—1. Characteristic double rise of temperature within 24 hours contrasts with the high continuous chart showing chop ladder rise and fall of typhoid.

2. Absence of dicrotic pulse with abdominal symptoms contrasting with persistent rapid pulse of Kala Azar.

3. Spleen is not so enlarged as typically as in Kala-Azar.

4. Great reduction of white corpuscles is a dignostic sign in Kala-Azar whereas there is only slight reduction in Typhoid.

DIFFERENTIAL DIGNOSIS IN A CENTRE FOR KALA-AZAR TREATMENT.

The following points should be taken into account in forming a correct diagnosis on the basis of the clinical knowledge.

(1) All cases giving a history of fever coming every other day or every third day are without malaria but when quinine treatment fails search for other causes of such fever.

(2) All cases with double rise of temperature within 24 hours are Kala-Azar cases.

(3) All cases with enlarged spleen and history of repeated continued fevers are most probably Kala-Azar cases.

(4) When quinine failed in the above mentioned cases inject antimony solution intravenously. This will be an efficient guide in diagnosis while other clinical tests could not be relied upon.

(5) If practicable the peripheral blood film for malarial parasites may be examined under microscope.

(6) The aldehyde test may be done profitably with a little experience.

A CASE SHOWING THE EFFECTS OF GARLIC ON LUNGS

By

P. V. KRISHNA RAO, M.B., B.S.

Name :—Padmanabban, age 10 years, address c/o his uncle Mr. A. V. G. Gangadhara Mudaliar, Engraver, Swan & Co., Printers Chintadripet, Madras.

Previous History :—The boy suffered from acute rheumatic fever 1½ years ago and his heart was affected by it. He subsequently developed cough and fever for which treatment was of no avail and he was brought to me on 9-9-22.

On Examination :—Heart—a soft bruit was heard replacing the 1st sound at the apex. Lungs—clinical signs same as T. P. on both sides. Sputum—on examination *negative*.

Abdomen :—Full and slightly hard. Wind and slight fluid present.

Temperature :—On 9-9-22 100·3° F.

10-9-22 100·3° F.

Treatment :—I gave him Purges and Injections of Allylene and Rheumatic Phylacogen and gradually all his complaints were cured and he is quite alright now.

After each injection of Allylene the temperature used to shoot up to nearly 103° F. and gradually subside in 2 or 3 days. I gave 6 injections of Allylene and 6 injections of Rheumatic Phylacogen. At the end of treatment the lungs were free from abnormal sounds and the abdomen was felt soft as normal. He did not get a relapse so far. I wanted to wait more than one full year before I wished to publish this case. The boy is quite alright now and can be inspected at his uncle's residence in Chintadripet, though he has got still the bruit in his heart.

I wish to point out the good effect of garlic on the lungs and I may suggest that injections containing garlic may be tried in all suitable lung cases.

A RARE CASE OF PLAGUE

By

DR. S. S. DUGAL, L.M.P., M.R.I.P.H., MEDICAL PRACTITIONER, RANGOON.

On the 21st of August 1923, at about 3 P.M., I was called out to see a young Persian boy of over 20 years of age. The history of the case was, that he had an attack of Gonorrhœa some three years back, which was treated and cured. Now he complained of frequency of painful and

scanty micturition, with no urethral discharge, dull aching pain all over the body and headache. A couple of days back he has been under the treatment of another practitioner, (this I came to know at the last moment) of which I was kept in ignorance. On examination I found a lemon yellow tint all over the body, conjunctivæ highly tinted, mucous membranes very slightly, if any at all. Temperature was normal, pulse 88 and respiration 20. Urine was dark reddish in colour and scanty, liver very slightly enlarged downward. In the heart a systolic murmur was detected over the aortic region. This could easily be heard right down to the apex. There was no history of palpitation, or breathlessness on slight exertion, no sign or history of oedema. The patient is a regular football player and cyclist. Lungs were clear. Bowels constipated. He had persistent nausea and vomiting. He could retain nothing, otherwise the patient was quite cheerful. Suspecting obstructive jaundice, I put him on Hydrag Subchlor ½ grain doses every two hours and a mixture containing the following :—

Rx. Soda Sulph 3i
Bismuth carb grs. X
Soda Bicarb grs. XX
Am Chlor grs. X
Tr. Podophylli m. X
Syrup 3b.
Aqua AZI
Mft. mist Oz every four hours.

His people were advised to keep him on liquid diet and to give pieces of ice to suck. Ice and Eu-de-cologne packing to be applied for headache. Next morning when I called over at 9–30 A.M. the patient was more or less in the same condition, yellow tint over the body and conjunctivae had increased, bowels opened 4 times. Vomiting slightly better, could retain soda and the mixture. Headache was relieved. Burning on micturition better; general condition just the same. Temperature normal, pulse 90 and respiration 22. I left him in that condition without changing the mixture or the powders.

I was again sent for at 5 P.M. On going there I found rise of temperature to 102°F. Headache reappeared. He complained of slight pain over the hepatic region, nausea and vomiting very obstinate but could retain mixture and soda. He had hiccough for an hour or two, but it had disappeared before my arrival. The patient felt pain over his chest while lying down—hence he was sitting up, cold packing over the forehead was reapplied, ice was given to suck and the mixture was changed to one containing the following :—

Rx. Soda Salicylas grs. X
Am Chlor grs. XII
Soda Sulph 3i
Spt. : am : arm m. XX
Tr. Podophylli m. X
Tr. Rhia Co m. XV
Aqua anisi OZI Oz four hourly

I left the patient at 5–30 P.M. promising to call over again the next morning. The same evening at about 8 P. M. while I was on my dinner, their man came to inform me that the patient was very bad and as they could not get me, they had sent for another doctor who was waiting for me. I went and saw the patient sinking and gasping for breath. The pulse was imperceptible, breathing very hard. The patient was unconscious, temperature 103·6 F. The doctor there had already given him some musk and after consultation with him I gave him an injection of Pituitrin. As we could not account for this sudden bad turn, we took a blood slide from his peripheral blood and left the patient giving up all hopes. The patient died an hour after we had left. Next morning on examination of the slide, it was found to be full of plague Bacilli.

The interesting points in the case are :—

(1) Signs of acute jaundice, without any colouration of the urine—though the urine had not been tested for bile.

(2) Absence of temperature till a few hours before death.

(3) Absence of any signs of plague. No glands, practically nothing in the lungs. No hæmorrhage of any kind.

(4) Persistent nausea and vomiting but mixture and soda could be retained till a couple of hours before death.

(5) Patient had been quite conscious, chatting with his friends and relatives up till a couple of hours before death.

FAMILIAL CONTRACTED PELVIS

By

THE MEDICAL OFFICER, CHOWRAH.

A & B are two brothers and A has five daughters and B has two.

1. A's first daughter was married and as her first delivery was prolonged, medical help was sought for. A dead child was extracted and the patient recovered with a big vesico-vaginal fistula.

2. A's second daughter could not be delivered normally (first para.) and she expired before any medical man could be called in.

3. The third daughter also had to get medical help for her delivery. A dead child was extracted and the patient died subsequently from puerperal sepsis.

4. For the 1st delivery of B's second daughter, I was sent for. I found the patient extremely lean and ill-developed. On examination the os was fully dilated, the membranes were ruptured, and the head was fixed with a large caput succedaneum. The second stage was prolonged and there were signs of foetal distress. As there was no time to lose, forceps were applied under chloroform anaesthesia and a living child was extracted. The patient had severe shock, but under appropriate treatment, she revived and made an uneventful recovery.

5. About three months after the last case, I was called in to see the sister of the above patient. She had two previous tedious labours. As she was not getting proper pains, the country midwife made her stand up and applied downward pressure on the uterus. During this procedure, the patient felt as if something had given away in her lower abdomen and lay down collapsed. Now there was complete cessation of labour pains with some relief to the patient. On examination, I found her in a state of shock with a rapid and feeble pulse. On palpation, the foetal parts could be felt with extraordinary clearness. On auscultation, no foetal heart sounds could be heard. Vagina was unnaturally hot. The cervix was fully dilated. Head was presenting, but was high up and receded on pressure. With the help of another Medical Officer, internal podalic version was performed and the child was delivered as a breach presentation. It was with great difficulty that the after-coming head was pulled out. Placenta was removed manually. There was a rent in the anterior uterine wall and it was plugged. After delivery, the pulse was imperceptible at the wrist and she had to be kept on with intravenous and rectal saline. The patient subsequently showed signs of pelvic peritonitis and died of profound toxaemia, three days after rupture of the uterus.

Of the five cousins, only one recovered completely, while others either died or recovered with an incurable vesico-vaginal fistula. From this the necessity of early treatment of all labour cases with contracted pelvis can be clearly understood. I have not come across any family which had 5 cases of difficult labour within a decade. The cause of all these is contracted pelvis—most probably hereditary or familial.

ASCARIS LUMBRICOIDES AND SEVER HAEMORRHAGE AS COMPLICATIONS IN A MIXED TYPE OF DYSENTERY IN AN OLDMAN

By

DR. P. B. KARKAREY, M.B., NAGPUR,

One Hindu male aged 49 years, goldsmith, had a severe attack of dysentery of mixed infection (Both amæbic and Bacillary). He was put on castor oil emulsion and passed healthy stools on the second day. He therefore withheld the mixture and did not like to take the mixture because of its abnoxious taste. To my surprise on the 3rd day the patient passed streams of frank blood every ten minutes which alarmed his relatives and so I was called in to attend on him. He was examined by me. I saw him sinking gradually. So I at once pushed in hypodermically 1 c.c. of Haemoplastin (P D Co) keeping 1 c.c. of the same serum for intravenous injection, if required. Shortly after this ½ gr. of Emetine Hydrochloride was given hypodermically. Though the blood flow was arrested and the number of stools decreased the pulse of the patient persisted to be thready. I therefore used camphor in oil 1 c.c. in preference to Pituitrin and Adrenalin. This increased the tension of the pulse and the patient looked little better. Thereafter the patient was put on again on Oil Recini, Bismuth and Opium mixture altered with the routine treatment by salines, whey and cocoanut water. Inspite of all attempts to combat the griping (by antispasmodics and sedatives) and occasional streaks of blood the patient had no relief. Light diet as barley, water Isafgul sharbat, and hot flannel binders to the abdomen were equally ineffective. So I started a mild intestinal disinfectant salol in moderate doses with soda bicarb morning and evening. I hardly had continued these powders for a day or two, I was informed that the patient vomited one round worm. (Ascarin Lumbricoides) which was a foot in length but coiled up when emitted out. This gave me to understand that the griping was due to these worms which were in good number as will be seen soon after. I started at once with Santonin three grains and Soda bicarb 20 grains uniting calomel and pulvis scamonii as usual constituents for fear of unnecessarily irritating the alimentary canal which was already inflamed and bleeding. Next day I was told that a bundle of about ten worms curled up with one another was found in the stools. I continued the same treatment by Santonin powder with half the dose on every third day, asking the attendants to watch the number of worms in each stool. And I was astonished to get out as much as thirty-two worms in all of different sizes too, varying from an inch to a foot. When there was no worm found in the stools continuously for ten days I stopped the

powders and put him for a day or two on teaspoonfuls of Amebiazine (Anglo-French Drug Co.), but that two had to be stopped as the patient could not tolerate it. I then began simple astringent mixture and Bismuth powder with judicious dietary containing fresh fruit, juices etc., and the patient made speedy recovery. I am happy to say that the patient was quite alright and took to his ordinary work of attending his gold and silver shop on the 19th of October 1923 after two months of this serious attack of dysentery with aforesaid complications. Looking to the age of the patient the prognosis was not certain though he recovered so easily. Fortunately there was no relapse which I was so much afraid of. I am of opinion that the patient in question had chronic intestinal infection which did not cause any symptoms sufficient to engross his attention immediately till it resulted in an outburst of enteritis. Once again emphasising the unusual complications of mixed type of Dysentery I beg to conclude.

A FATAL CASE OF FACIAL CARBUNCLE

By

A. N. Yajnika, Jaipur.

The subject of this sketch Mr. Hazari aged 45 had an acute cellulitis of the face. The inflammation was characterised by a densely bad base and a brownish red discoloration of the area affected. It was about a half-rupee size in its initial state. But as time went on several points of suppuration appeared and the different openings ultimately fused together and a large adherent greyish white slough formed; and greenish black discharge began to exude freely. The foul smell was very prominent; even the inmates of the house could hardly bear to stand near by the patient. The patient became prostrated from the outset.

In the course of a few hours, the ulcer increased very rapidly and the process of inflammation spread inside the mouth, floor of the mouth gums, and even jaw became gangrenous and the line of demarcation extended up to the temporal region. It is noteworthy, that urine in this case was free from sugar and albumin. The constitutional disturbances were severe, the temperature was subnormal, face was ashy, pulse was feeble and rapid.

On the fourth day, operation was decided, white slough were removed and a piece of bone from the lower jaw along with the loose teeth were chiseled out. The condition slightly improved. Feeding became difficult, everything given by way of nourishment would come out from the big gap. Feeding was resorted to by the aid of a glass funnel and rubber tubing. Constant irrigation with the boric lotion was kept on and free stimulation was enjoined. There was some reaction of the operation. There was change for the better, this condition was observed for four days. But sorry the patient lastly succumbed to septic pneumonia.

The Antiseptic

JUNE, 1924.

THE VALUE OF BLOOD ANALYSIS.

With the advent of "Micro methods" of analysis enabling quantitative estimations to be made with small quantities of material, blood analysis has come to be as important and much more useful diagnostically and prognostically than urine analysis. As blood is the chief medium of exchange in the body, any alteration in the chemical changes in the body will be earliest seen in it and will thus give an accurate and precise information. Urine, on the other hand, according to Prof. P. J. Cammidge, M. D., "is the vehicle by which the various actors who have played their parts in the drama of metabolism pass to the outside world." As yet blood analysis cannot be said to have completely pushed away urine analysis to the background. Each has its own sphere of influence.

For the purpose of analysis fasting blood is always made use of, because injestion of food materially alters its composition. Normally, chemical constituents of the blood can be classified into organic and inorganic substances. Anyone of these either alone or together with others may vary, and their study is of great use in diagnosis, prognosis and treatment.

Taking organic constituents the estimations of blood sugar are by far the most important. Any proportion of sugar in the fasting blood exceeding 0·12% (normal) is abnormal and indicates the absence of sufficient control over carbohydrate metabolism. High blood sugar contained after a fast is of a more serious prognosis than one occurring after meals and indicates pancreatic inefficiency. Sugar content below ·07% (hypoglycæmia) is attributed theoretically to an increased formation of internal secretion of the pancreas. This is also due to deficiency of internal secretion of glands, such as suprarenals and the pituitary which promote the formation of the

sugar from stored glycogen of body. Estimations of blood sugar are also of importance in finding out the "difference value" *i.e.*, the difference between the percentage of sugar and the percentage of reducing material found after hydrolising the protein-free filtrate of the blood with dilute acidosis (*i.e.*, the total carbohydrate), which normally must not exceed ·008%. Variations indicate pathological changes. A high difference value in the fasting blood with normal sugar content or mild hyperglycæmia is characteristic of deficiency of the pancreatic internal secretion. But a low difference value with excess of sugar (0·40%) is characteristic of Diabetes where the control of the pancreas over internal carbo-hydrate metabolism is lacking; a high fasting difference value found long before hyperglycæmia and glycosuria is characteristic of chronic pancreatitis. The Haemoglobin dissociation constant (k) of the blood is also an analysis of some value; because in the absence of carbon-dioxide it indicates the relation between fixed acids and bases. By estimating its value, therefore, in a number of specimens taken before and after food the variations in the acid-base equilibrium of the blood produced by the formation of digestive secretion can be followed. The normal value is 22. In hyperchlorhydria, there may be a rise above normal level and delay in returning to the normal, varying according to the extent and duration of the acid secretion. In hypochlorhydria the rise is less markable than normally and quickly reaches the maximum. In any excessive formation of the external secretion of the pancreas, there is a pronounced fall in the dissociation constant which may reach its lowest point only several hours later than in a normal case. In deficiency of external secretion the normal fall does not occur and the figures obtained do not differ from the normal fasting value. There is also a close relation between dissociation constant and the percentage of sugar in the blood. They vary inversely in health, except in very rare instances. Hepatic insufficiency can also be recognised by blood analysis. In normal persons, no appreciable alteration in blood sugar occurs after the administration of 50 grs. of Laevulose. But in hepatic insufficiency this is not the case. This is considered to be a much more accurate method of estimating hepatic insufficiency than by the examination of the urine after test dose. From the point of treatment also estimations of blood sugar are of great importance during the administration of Insulin. Constant estimations of these must be made to guard against hypoglycæmia.

Among the other organic constituents estimations of uric acid are of very great importance. Its accumulation is practically the first sign obtained when the excretary function of the kidneys are deranged by interstitial change. Later on urea nitrogen and creatinine increase. As the urinary changes in most cases are exceedingly meagre and give very little help, these findings are of great help diagnostically. Further prognostically, Myres and Lough have shown that when the percentage of creatinine in the blood is found to be above 5 m. grs. the prognosis is very grave. Hepatic insufficiency can also be measured by estimations of urea nitrogen, uric acid, ammonia nitrogen, amino-acid nitrogen, all of which indicate the progress of protein metabolism and functional activity of the liver. Excess of amino acid-nitrogen, high uric acid, low urea are indicative of insufficiency; whereas a constant rise in the uric acid output without a corresponding rise in the other two constituents is characteristic of gout.

Of the inorganic constituents calcium is by far the most important for the purpose of analysis. In acidosis (in which case there will also be found a low proportion of other metallic bases) a low hemoglobin constant, low carbondioxide tension, and excess of ammonia nitrogen; (2) in Hypoparathyroidism (Tetany) and in Hypopituitarism the normal percentage of 5. 5. m. grs. per cent will not be reached. Regarding other metalic bases much is not known about the true significance of variation with the exception of potassium and magnesium whose deficiency is characteristic of the disturbances of the nervous system.

Of the acid radicles phosphates are perhaps the most important. Excess of this is constant after serious acidosis and deficiency of chlorides is characteristic of hyperchlorhydria.

For further detailed information we refer our readers to a learned article in "The Practitioner" by Prof. P. J. Cammidge, M. D.,

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THE SANATORIUM TREATMENT OF PULMONARY TUBERCULOSIS.

There is a tendency among medical men as well as the lay public to recommend sanatorium treatment to all and every case of pulmonary tuberculosis. When a man comes across a consumptive it is not unusual at any rate in South India for him to ask "why not go to Madanapalli" without for a moment considering whether the

case is a suitable one for such treatment. Sanatorium treatment is accepted by all to be one of the best means of treatment, but it is also accepted that to regard it as a standard and routine method of treatment is prejudicial both to the welfare of the patient and the reputation of the treatment. Sanatorium treatment is perhaps the best method of cure in a particular stage of practically all tuberculous people and to subject the patient to this treatment either earlier or later will do more harm than good. This selection can only be done properly by early diagnosis.

The advantages of undergoing sanatorium treatment are not properly understood by the laity. In addition to fresh air, good food, and proper medical supervision the patient is free from extraneous infection with other pathogenic cocci—one of the most potent causes of death in tuberculosis. Moderate and graduated exercise to suit every individual case and a good working knowledge of the methods adopted in a sanatorium which will be of immense value both to him after discharge from the sanatorium and to his fellow consumptives are among the many benefits which are not properly understood and taken to heart by people in these parts.

The types of cases unsuited for sanatorium treatment are those which are very advanced and present complications requiring careful nursing and complete rest; cases which show active signs of the disease such as fever and cough (especially so if it occurs in the old and aged, and those showing signs of chronic bronchitis) and cardiac involvement. In this last condition the travelling and jolting of the journey oftentimes proves too severe for the patient or the restrictions of a sanatorium too troublesome.

What then are the cases best suited for sanotarium treatment? In this connection the severity and the extent of the lesion is a more important factor than the duration of the disease or the age of the patient. We wish to once again impress upon our readers the importance of correct and early diagnosis and the sending of the proper case to the sanatorium as otherwise more harm than good will be done and both the health of the patient and the name of the sanatorium will suffer. Early cases without fever or those in which the fever has subsided and the patient is able to get up and walk about for six to eight hours without a raising of the temperature are the best suited for sanatorium treatment.

Cases after pleural effusion and after the successful establishment of artificial pneumothorax are also sometimes very much benefited. Last but not the least to be taken into account is the temperament of the patient. Shy, nervous and homesick patients never improve in sanatoria. They do much better at home than elsewhere.

The next question that is very often asked is—How long should a patient stay in a Sanatorium? This is not easy to answer. Of course, the ideal will be to stay till he is cured but very often financial and other conditions do not allow of this in these countries. Perhaps the safest minimum will be about six to eight months by which time marked improvement will have occurred. Whenever progress is very slow and improvement is not very appreciable change to another sanatoria often does good.

CURRENT TOPICS

MEDICINE.

Haemetemesis "without Leisons."—B. M. J. 12—4—24 Monod.) Hale White collected 29 cases of haemetemesis which on operation orpost mortem showed no gross vascular leison explaining the haemorrhage. Such hæmetemesis Hale White called "gastrostaxis" and pointed out its greater frequency in women. The author gives details of several other cases in which on operation no gross vascular leison responsible for the haemorrhage was found. Tatarjet experimenting on dogs found that section of the proper gastric nerves caused vaso-dilation of gastric wall (not inculding the mucosa though) peritoneums and omentum going on to echymosis, and the author supposes that in gastrostaxis there is some perturbation of the normal control by the nervous system of the vaso-motor system of the gastro-intestinal mucous membrane induced perhaps reflexly by gross leisons in neighbouring organs as happens in appendicitiis and cholecystitis when gastric hæ norrhage may take place. Such haemetemesis is frequent in gastroptosis, and small defects as liver function bands, kinks, stenosis etc., may play an aetiological part. Though Dieulafoy used to teach that this condition ran a rapid fatal course, the prognosis is now considered to be not dangerous. *S. R.*

Herpangina.—(JOHN ZAHORSKY ARCH RED. MARCH 1924.) For many years during summer Zahorsky has been observing frequent occurrence in children of a febrile disease with a vesicular eruption on the bucco-pharynx which he considers to be a special disease and calls Herpangina. The disease occurs only in the summer months and in infants and children under the age of 15 years, the chief incidence being between 3 and 10. The disease is contagious; in a family one child after another may contract the affection and the incubation is 4 to 10 days. The disease commences with marked febrile movement (102° to 105° F); a chill was observed in only one case. Vomiting is common but does not persist as a rule. The child feels tired and complains of headache and pains in back and extremities and on movement pain and tenderness may be so marked as to raise suspicion of poliomyelitis. On examining the throat-millet, seed sized vesicles are found chiefly on anterior pillar of fauces, free margin of palate, tonsil, pharyngeal mucous membrane and infrequently on posterior buccal mucous membrane and roof of the mouth. The vesicles begin as a papule which undergo vesiculization in 24 hours which often ruptures leaving a punched out ulcer surrounded by distinct inflammatory area about the size of a pea. The ulcer becomes covered with thin exudate and its edges are undermined, thus differing from those of ulcerative stomatitis (fuso-spirochaetal). There are usually only two to four vesicles; in one case 14 were counted. Coincident with vesiculization there is marked general angina; the tonsils are inflamed with some pultaceous exudate and may be mistaken for follicular tonsillitis. The blood shows slight leucocytosis. The fever continues 2 to 4 days and drops with crisis, and the ulcers heal in a few days more leaving slight scarring or minute depression. Smears from the vesicles show ordinary oral bacterial flora. A permanent immunity follows one infection. The disease may in some way be related to bovine foot and mouth disease and poliomyelitis. In some families he has seen cases of poliomyelitis follow occurrence of cases of herpangina. *S.R.*

Action of Vitamines (CRAMER, LANCET 29—3—24) Though isolated cells can grow in culture indefinitely in absence of vitamines, the complete higher organism suffers. Absence of vitamine A causes atrophy of intestinal mucous membrane, para-ocular glands and thrombopania Ultra-violet light has a similar action as vitamine A causing increase of blood platelets. Absence of vitamine B causes atrophy of lympoid tissue and lymphopenia. It also causes loss of appetite. In presence of vitamines absorption of food is increased. *S. R.*

Specific Anti-microbic serum for Scarlet Fever (J.A.M.A. VOL. 82, No. 9, BLAKE, FRASK, LYNCH.) Bliss and other workers have isolated a hemolytic streptococcus from cases of scarlet fever which they claim to be the causal organism. Schultz and Carlton observed that the intradermic injection of serum of scarlet fever convalescents and immunes caused local blanching of the scarlet fever rash which blanching might continue until the rash in other parts faded normally. Serum from acute cases of scarlet fever and non-immunes has not this effect. The rash is supposed to result from the local action of the toxins of the infection and the blanching to result from local neutralization of toxins by Anti-toxins. A serum has been prepared by immunizing horses with cultures of the isolat-

ed haemolytic streptococcus by Docher and has been used by the authors in 13 cases of scarlet fever. In 7 mild and moderately severe cases after a single intramuscular injection of 40 to 60 cc of serum complete recovery ensued within 24 hours with critical fall of temperature in 12 hours, complete disappearance of the rash in 24 hours, rapid improvement of angina and disappearance of toxic manifestation. In two severe cases with almost hopeless prognosis otherwise, repeated injection of 40 to 90 cc were required for cure. One late septic case with thromboplebitis and streptococcal septicaemia and bull neck although the rash dissappeared temporarily, no improvement took place in the complications and the patient died. *S R.*

Diluted Chlorine Gas as a Respiratory Disinfectant (J.A. M.A. 8—3—24.) Vidder and Sawyer found that whereas a concentration of 0·048 mg chlorine gas to the litre of air caused irritation of the throat in 3 minutes and that of 3·00 mg. per litre caused death in half an hour, a concentration of 0·020 mg. chlorine gas per litre air could be safely inhaled for an hour. Such a concentration proved lethal to bacteria plated on agar in 60 to 135 minutes, different bacteria varying in their susceptibilities. In 50 human cases inhalation of 0·020 mg. per litre air for an hour seemed sufficient to sterilize almost completely the tonsillar, post-nasal and pharyngeal surfaces. A large number of cases of acute and chronice rhinitis, laryngitis and bronchitis, 9 cases of pertussis and 11 of influenza were given on successive days one hour inhalations of 0·015 mg Chlorine per litre in a special chamber into which this gas-air mixture was passing in which cases after 1 to 4 treatments the majority were cured and the rest improved. In pertussis after one or two inhalations the vomiting ceased and the cough was markedly reduced. They have invented a portable apparatus by means of which it is possible to obtain from liquid chlorine such a dilution of chlorine gas in any closed room. *S.R.*

Sodium Thiosulphate in the Treatment of Mercurial and Salvarsan Dermatitis. DERM ZEITSEHR OCT. 1923.—Hoffman finds that mercurial dermatitis commences on the flex or aspects of joints and salvarsan dermatitis on extensor aspects. This point is useful in the diagnosis of the origin of dermatitis in cases in which both drugs have been given. Sodium Thiosulphate intravenously in injections given daily starting from 0·3 grams and raising to 1·8 grams gives good results in both dermatitis, but is not to be used prophylactically to prevent dermatitis as it prevents the microbicidal action of the drug, (From Abst. B. J. Derm. Syph.) *S. R.*

Effect of Massive Doses of Digitalis. JEUSEN. (LANCET 12—4—24).—In 1916 Eggleston proposed obtaining a full digitalis effect in auricular fibrillation by administration of three large doses of Digitalis (1 to 1½ dram Tinct Digitalis) at 6 hour intervals and then no more for a period. The author reports the experimental observations of the effects of this treatment in 7 cases of auricular fibrillation without heart failure. Apart from occasional coupling of beats in two cases there was no indications of poisoning or overdose, and nausea and vomiting did not occur, a fact showing that nausea and vomiting in heart failure depends far more on heart condition reflexly than on the gastric irritant effect of Digitalis. The excretion of urine in these cases without heart failure and œdema was not increased. The patients felt subjectively better and had less palpitation. The heart rate fell by 10 beats per minute 12 hours after the first dose and next day there was another fall of 10 beats. The pulse was much improved, the volume being larger. However on exertion or after a full meal the pulse rose temporarily to its former rate. The duration of this effect in the heart lasted from 4 to 14 days. S. R.

Increased Susceptibility to Adrenalin. (SYMES THOMSON 12—4—24. LANCET) Goetsch found that injection of adrenalin hyperthyroidics 7·5 m. of 1/1000 adrenalin caused greater or longer increase of blood-pressure and pulse than in normal persons with heart consciousness, asthenia, feeling of dread pallor, flushing and sweating and concluded that thyroid secretion caused increased sensibility to adrenalin in sympathetic nervous system. Cocaine, alypine and novocaine also increase sensitiveness to adrenaline (Sternberg). The author describes a case of slight hyperthyroidism in which anaesthesia injection of 65 c.c. 1/3 % novocaine with 2 c.c. 1/1000 adrenalin caused death with cessation of respiration and circulatory failure. Dixon states that synthetic adrenalin has half toxicity of natural adrenalin. Certain persons show greater susceptibility to adrenalin, and before large doses of adrenalin are administered for local anaesthesia and otherwise, a test for susceptibility should be made with a small dose. *S. R.*

Sodium Thiosulphate an Antidote in Mercurial, Bismuth and Arsenical Poisonings B. M. J. No. 3302.—Semon in these poisonings gives 0 45 to 0·9 gramme of chemically pure dehydrated Sodium Thiosulphate in 5 c.c. distilled water intravenously daily or every alternate day. He reports two cases of Mercurial and Bismuth stomatitis in which rapid cure followed 1 to 3 injections. In one case of arsenical jaundice with positive clinical hepatic insufficiency tests with daily injections (0·45 to 0·5 gramme) for nine days, all symptoms, jaundice, nausea, depression, shivering, vomiting disappeared and clinical test showed hepatic function normal. In one case of subcutaneous extravasation of salvarsan solution, immediate injection of 0·75 gramme $Na_2 S_2 O_3$ in 8 c.c. water into extravasated area aborted entirely the local irritant action of Salvarsan solution. Mac Bride and Davies have treated even a case who swallowed 7½ grains Hg cl 2 and was brought to hospital 4 hours later with acute abdominal symptoms and haematuria. 15 grammes $Na_2 S_2 O_3$ orally and 0.45 gramme intravenously checked pain and diarrhoea in a short time. 8 hours later 0·9 grammes and next morning 0·45 were given intravenously. Patient made complete recovery in a week and although 8 months pregnant did not miscarry. Semon does not give $Na_2 S_2 O_3$ orally as he found that in one case 1 dram thrice daily gave rise to colic and that the intravenous method is more rapid and less toxic. *(S. R.)*

Researches on Vaccine Virus. J. STATE, MED. APRIL 1924, LEVADITTI.—After passage of vaccine virus from bovine and other vaccine pustules through rabbit's testicle, Levaditti was able to adapt the vaccine virus to development in nervous tissue in rabbits making passages from

brain to brain in a long series with the identical procedure used in maintaining rabies virus in rabbits. The vaccine virus has a special affinity for cells of epiblastic origin. Passage through skin increases its affinity for dermal cells and the virus is then called dermotropic vaccine or dermo-vaccine. Passage through nervous tissue increases its neurotropic affinity and makes it a neuro-vaccine. The rabbit is the animal most susceptible to vaccine virus. On intracerebral inoculation of neurotropic virus the vaccine virus disseminates itself throughout the whole of the central nervous system and makes its way into the saliva also. It also infects the skin causing diffuse discrete eruption especially in such areas as are irritated by depilation, etc. The virus on intracerebral inoculation infects mammary gland, liver, lung, adrenal tissues of epiblastic and endoblastic origin, and the testicle, ovary, uterus and fertilized ovum though these cells are mesoblastic. The virus has very poor affinity for other mesoblastic tissues as blood bone-marrow, spleen, kidney, muscle, etc. Inoculation of neurovaccine on scarified cornea causes keratitis with cerebral infection. Intra-neural injection of neuro-vaccine also causes dissemination to central nervous system and other infectible tissues. Neuro-vaccine on intravenous injection causes only dermal infection, but if the central nervous system is inflamed by injection of broth, saline etc., infection of central nervous system also follows. Intraperitoneal inoculation gives totally negative results. The leison on intracerebral infection of rabbits with neuro-vaccine is infiltration of cortex and septa with poly and mono-nuclear leucocytes, parenchymatous inflammatory foci, perivascular infiltration without however any destruction of nerve cells as found in poliomyelitis. After repeated passage neuro-virus becomes fixed in virulence killing rabbits in between 4 or 5 days, seldom before the 3rd and after 8th day. Guinea pigs, rats, mice, cows and monkeys are susceptible to neuro-vaccine on either intracerebral or dermal inoculation. In fowls neuro-vaccine does not produce pustulation but protects against pustulation by dermo-vaccine. Neuro-vaccine inoculated into skin of babies produced 70% typical vaccine pustules and on account of asepticity from bacterial flora is the ideal material for routine vaccination in humans. *S. R.*

Compensatory Hypertrophy of Adrenals. J. PATH BACT. APRIL 1924.—Bycott and Kellaway removed one adrenal from growing rabbits and found the experimental animals apparently as normal as controls in behaviour. On autopsy after varying intervals the remaining adrenal was found to be of the same size as a gland in control. It is remarkable that at least one adrenal and most of the pancreas testis, thyroid and pituitary can be removed without producing obvious symptoms of interference of their internal secretory control. No compensatory hypertrophy follows removal of testis adrenal ovary and part of pituitary though there may be accelerated growth of testis in a growing animal the adrenal hypertropies in starvation and vitamine B deficiency. Adrenal hypertrophy also follows thyroid feeding and irritating rabbits by pushing gelatine capsules down their throats. Excess of the secretion of these endocrine glands cause pathological effects and it seems that the normal size of these glands have a greater reserve functional power than that possessed by non ductless gland tissue with greater powers of reactive growth to stimulus of increased functional necessity. *S. R.*

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SURGERY.

Intra-peritoneal Administration of Neo-Salvarsan (J. A. M. A. 1-3-24.) Rosenberg administered 6 injections of 0 03 to 0 04 gm. neosalvarsan at 10 day intervals in ½% solution in distilled water intraperitoneally to an infant without noticing any abnormal behaviour. In rabits he found intraperitoneal neosalvarsan caused a mild peritonitis which cleared up without apparent bad effect, in general the peritoneum remaining smooth and glistening with slight organisation at point of injection. In a few cases adhesions resulted. The intraperitoneal administration of salines, sodiibicarbonate and glucose solutions and of transfusions of citrated blood has become the recognized convenient method of administration of these remedies in infants. *S R.*

The Aspiration Treatment of Hepatic Abscesses. (LANCET 29-12-23.) Neligan warmly endorses the aspiration treatment of liver abscesses. Open drainage is dangerous on account of secondary sepsis, the reported mortality being 40%, and requires frequent and costly dressing. Open drainage should almost as much be avoided in liver abscess as in tubercular, the puncture wound being scaled by collodion dressing. In the abscence of localizing signs and after unsuccessful puncture at other sites, a puncture should be made near the angle of the right scapula as the most likely point for successful puncture. Though there is no need for general or local anaesthesia and no pain is felt once the thoracic and abdominal parites is traversed, a stab wound made with a sharp tenotomy knife facilitates introduction of the large aspirating needle. It is useful to inject with the abscess weak solutions containing either 10 grains quinine or 2 grains emetine. 3 cases are described in which repeated aspirations and injections resulted in complete cure. He has never seen any symptoms of serious internal haemorrhage follow aspiration. *S.R.*

Effect of Ligation of Vasa Deferens. (WALKER AND COOK, 2-2-24 LANCET). Ligature of the Vasa Deferens causes retrogression of germinal epithelium of legated testis and hyperplasia of interstitial cells both in the ligated and unligated testis. After some time spermatogenesis re develops in the ligated testis. Bensley has found that acinar as well as insular cells degenerate after pancreatic duct ligature, the acinar before the insular, but both tissues are regenerated after some time from duct epithelium. Steinback found that senile rats after vasa-deferens ligature showed marked temporary renewal of sexual vigor with return to vigorous adult conditions of life. The authors legated the vasa deferens in two cases of paralysis agitans in seniles in which marked improvement in nervous symptoms and general wellbeing followed. *S. R.*

Mode of Action of Glandular Grafts. (WALKER LANCET, 16-2-24.) Grafted glands whether from the same or different species after becoming vacularized and developing undergo absorption as a result of development of immune reactions. Morris however found in one case of atrophy of the testes that testicular grafts stimulated hypertrophy in the atrophied testes and the enlargement was maintained even after the grafts were absorbed. Grafts of glands by stimulating development in the

patient's own glands do good even if they eventually atrophy and the argument that these grafts eventually atrophy does not validly militate against their use. *S. R.*

Treatment of Carbuncle by Mg.SO_4 Paste. MORISON B. M. J. 19–4–24. A paste of dried Mg. SO_4 and Glycerine (1½ lb. Mg. SO_4 and 4 oz. Glycerine Acid Carbolic B. P.) is made by titrating Mg. SO_4 and Glycerine in a hot mortar. The result is an extremely hygroscopic cream which rapidly absorbs water becoming liquid and requires preservation in air-tight containers. The paste is spread and covered entirely with a layer of jaconet. A profuse discharge of serum take place, the dressing being renewed every 12 to 24 hours. Pain is greatly releived after one or two dressings, constitutional spmptoms rapidly and within a few days slough separates leaving a healthy granulating surface. The cavity left is packed with gauze impregnated with saturated solution of Mg. SO_4 (Mg. SO_4 40 oz. Aqua 30 oz. Glycerine 1 oz. sterilized in an autoclave) till the granulating surface is flush with the skin when it is skin-grafted if necessary. 28 cases were treated without a single death. The advantages are no surgical interference; combined osmotic action of Mg. SO_4 and its inhibitory action on cocci cleanses the wound and aids in separation of sloughs and unhealthy tissue and granulations formed are firm and well adapted for successful skin-graft. *S. R.*

Treatment of Burns by Linement Calcis Chlorinata. B. M. J. 19–4–24). Tomb prepares Linement Calcis Chlorinata in the same way as B.P. Linement Calcis, substituting Liquor Calcis Chlorinata B. P. for the Liquor Calcis. He reports that burns of all kinds treated with Linement Calcis Chlorinata heal quickly without suppurating or rise of temperature and that sloughs and dead tissue rapidly separates. He advises that the Linement should be always prepared fresh when required as storing causes deterioration.

Effect of Ether Anaesthesia on Adrenalin Secretion. (TOHOKU J. EXP. MED.) Experimenting on dogs Sakuji Kodama found that ether anaesthesia not only diminishes the liberation of adrenalin into the blood stream but also lessens the adrenalin contents of the adrenal glands apparently through inhibiting synthesis of adrenalin.

Intravenous Acriflavine in Gonorrhœa. (J. R. JACOBS AND K. V. VIRASINGHAM I. M. G. FEBRUARY 1924.) Cases were given ½% acriflavine in 0·875% saline intravenously on a fasting stomach with 24 hours subsequent rest. The 1st dose was 100 cc, and 150 cc 2 days later; 3rd dose 200 cc 3 days later, 4th and 5th doses 200 cc after 4 days. Cases with posterior urethritis received daily Pot. Permanganas, irrigation prostratic massage also. In cases of duration under 2 weeks discharge ceased completely with an average of 3 injections; cases of duration 2 to 4 weeks required an average of 4 injections, of over 4 weeks, 5 injections. No other urinary antiseptics were used. The injections caused no outward effects.

Cervical Sympathectomy. By careful anatomical dissection. SHAVEE (LANCET 29–3–24) has demonstrated nervous connections passing on the right side from the middle and inferior cervical ganglia to the recurrent laryngeal and vagal trunk below the recurrent and on the left side from these ganglia to the recurrent laryngeal, vagal trunk and deep cardaic plexus. These nervous communications contain both afferent nerves to and from the heart and thyroid. Jonnesen has recommended a complete extirpation of the cervical sympathetic trunk in hyperthyroidism, angina pectoris, migrane epilepsy, trigeminal neuralgia and glaucoma on the theory that these coditions are caused by reflex nervous areas passing through the cervical sympathetic, and except in glaucoma when the effect is temporary this procedure has proved to be a valuable therapeutic measure. Shavee's discovery of communications between the cervical sympathetic and the vagus and its branches explains the therapeutic effect of this procedure in angina pectoris and hyperthyroidism. *S. R.*

Post-operative Treatment of Colostomy. (B. M. J. 29–3–24.) Gordon Watsons insists on a regular daily washout of the colon at a fixed time in colostomy. Such a procedure trains the colon to act but once a day and at the fixed time. The offensive odour can be eliminated by kerol internally. He personally knows several colostomy cases in the medical profession and in other walks of life who are enabled by this procedure to go through the normal routine of life without any inconvenience. *S. R.*

Aetiology of Priapism. LANCET 5–4–24 PORTER AND SWAN. A patient who was not leukaemic developed without apparent cause continuous painful erection of the penis from 26th August to 17th September without sexual desire. Spinal anaesthesia was induced successfully but had no effect on the erection. On 17th September the penis became livid and as thrombolic gangrene was anticipated, both crura penis were incised and a quantity of dark clothed blood expressed when the erection subsided. As spinal anaesthesia had no effect on the condition, the authors conclude that in this case the priapism resulted from disturbance in the peripheral vaso-motor system.

Intravenous Injection of Ca Cl_2 in Gonorrheal Epididymitis. THERAP-GAZ, MARCH 1924. Cerf found 5 to 10 cc of 10% Ca Cl_2 solution intravenously harmless, though during the injection patient may experience feeling of warmth in the month and heat all over his body for a few seconds. He has treated 17 cases of specific epididymitis with these intravenous injections repeated every 4th day or so if required, and reports that such an injection gives complete relief from acute pain almost immediately or within a few minutes and causes subsidence of inflammatory swelling and resolution to normal within a few days.

BOOKS RECEIVED.

The following books have been received and the courtesy of the publishers in sending them is acknowledged Reviews will be published from time to time. [ED. ANTISEPTIC.]

"Rhus Dermatitis" from Rhus Toxicodendron, Radicans and Diversiloba (Poison Ivy) Its Pathology and Chemotherapy.—By James B. Mcnair. The Universty of Chicago Press, Chicago, Illinois pages 293.

Dyspepsia, (and its self Treatment).—By Jadu Nath, Ganguli, B.A.M.B, Author of a treatise on "A National system of medicine in India" etc. etc., Pages 218, Price Rs. 2-8-0, Postage 0-6-0, Mr. M. B. Nath Biswanath Printing Works, Benares City.

Handbook of Surgery (1923).—By George L. Chiene, M.B.C.B., F.R.C.S., (Ed.) Pages 592 with illustrations, Price 12sh. 6d. Rs. 11-9-0, E. S. Levingstone Nos. 16, 17, Teviot place, Edinburgh.

Epitome on Blood Pressure, Aids to the interpretation of Blood Pressures for the General Practitioner with key for diagnosis.—By Burton|Baker Grover M.D., Pages 78, Price Sh. 3·00. The Election Press 115 East 31st Street

"Vegetable Drugs of India".—By Davaprasad Sanyal, L. M. & S., (Cal) Formerly Lecturer on Materia Medica and Therapuetics, Colleges of Physicians and Surgeon of Calcutta. Published by the author 13, Radha Nath Bose Lane (Goabagan), Calcutta, 397 pages, Price Rs. 3-8-0.

A Treatise on Hygiene and Public Health with Special reference to the tropics, (5th Edn.)—By Birendra Nath Ghosh, F.R F.P.S. Eng., Pages 586, with 99 illstrations, Price Rs. 6. Hilton and Company, Calcutta.

Impotency, Sterility, and artificial Impregnation (1923).—By Frank P. Davis Ph. B., M.D. 2nd Edition, Pages 168. 2.25 Dollars: C. V. Mosby Company St. Luis, Rs. 9.

An Introduction to the Study of Mental Disorders.—By Francis M. Bennes J.R.M.A.M.D. (2nd Edition) Pages 295. 3·50 dollars, Rs. 14-0-0. C. V. Mosby Company St. Louis.

Practical chemical Analysis of Blood, (a book designed as a brief Survey of this Subject for physicians and Laboratory workers), 2nd Edition with Illustrations.—By Victor Caryl Myers M.A.P.H.D. Professor and director of the Department of Biochemistry, New York Post Graduate Medical School, and Hospital. Paoges 232, Price 5 dollars Rs. 20· C. V. Mosby and Company, St. Louis M.O.U.S.A.

Medical Guide for India and book of Prescriptions (2nd Edition.)—By Lt. Col. E. J. O'Meara, G.B.E., F.R.C.S., D.P.H., (Late Civil Surgeon, and Principal of the Medical School Agra). Pages 695, Price Rs. 12. Butterworth and Co. Bell yard, Temple Par, London.

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