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# The Antiseptic

## A Monthly Medical Journal

EDITED BY
Dr. U. RAMA RAU & U. KRISHNA RAU, M.B., B.S.



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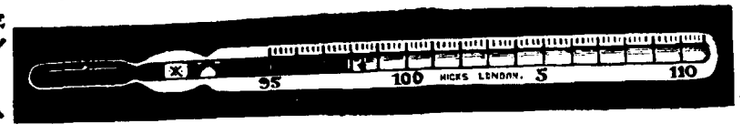


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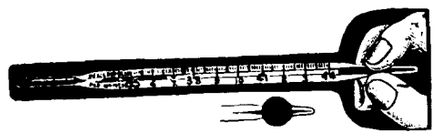

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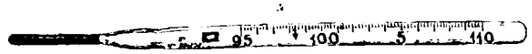
OUT OF FOCUS  ACCURATE

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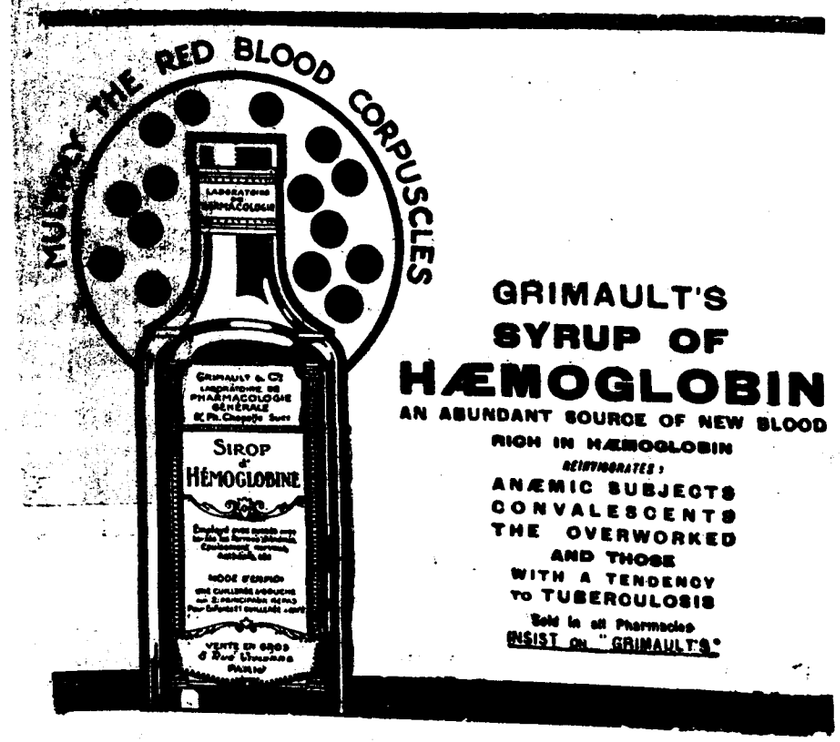

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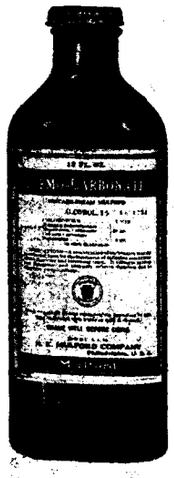

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# The Antiseptic

ESTD., 1904.

**A Monthly Journal of Medicine & Surgery.**

*Editors:* DR. U. RAMA RAU & U. KRISHNA RAU, M.B., B.S.

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## Original Articles.

### THE IMPROVEMENT IN THE DIAGNOSTICAL AND LOCALISING VALUE OF SKULL-PERCUSSION.*

BY

PROF. DR. L. BENEDEK.

The diagnosis of alterations in the cranium and of intra-cranial processes which are of interest to the neurologist cannot be lacking in any valuable enlightening data which may be obtained through the sense of hearing. This is characterized by a sensitiveness of high degree. The threshold of the effective acoustic stimuli, expressed in the measure of mechanical work, amounts to $1/100—\frac{1}{1000}$ micro-ergs. It is not seldom that tumours of the brain and other pressure-increasing processes change the physical qualities of the several parts of the cranium,—their solidity, compressibility, elasticity, denseness, and consequently the speed of conduction of sound ($c=\frac{E}{S}$), the tone-colour (that is, the quality of over-tone), their number and strength, as well as the condition of the reflection and also possibly the resonance. Accordingly, the altered physical conditions necessarily lead to a modification of the normal percussion-sound. The fact that in spite of very promising initiatives, the cranium-percussion was absent from the diagnostic inventory of neurologists, or at least did not

* From the University-clinic for nervous diseases, in *Debrecen, Hungary.*—Specially contributed to the Antiseptic.

occupy its due place, is, in my opinion, based on the following reasons. In the first place, the physical explanation of the sound produced by the percussion,—and non-musical tones,—is all too inadequate; and the conditions of the sound-production are extraordinarily complicated and difficult of survey. Further, the observations respecting the percussion tone-relations found under pathological conditions are not too seldom contradictory. Uncertainty in the manner of procedure of the percussion as well as in the individual variations of it, are likewise important factors in consequence of which this method of examination led to no comparative results. It is not to be wondered that among prominent internists we meet the frequent endeavour to eliminate that half-conscious, half-unconscious muscle-tension which influences in a high degree the height and strength of the stroke, and just at the instant in which the percussioning hand (or rather, finger) working with concentrated attentiveness reaches the zone of the expected tone-alteration. As *I. Schwartzmann* remarks, on such occasions the internist has the feeling of "not having been entirely sincere." The intensity and quality of the percussion-sound must therefore be freed from all those psycho-physical phenomena which are caused by expectancy on the part of the individual examining. Furthermore, the exactness of the percussion-process must be promoted by means of a suitable instrument to the limit of possibility, and the greatest possible optimal conditions must be provided respecting the auscultation of the produced sound. It is also essential that the applied process, as well as the instrument, should possess a certain uniformity, for only in this way are comparable results to be attained.

I cannot here pretend to sketch a historical summary, which would reach back even to *Wepfer*. (Vide, *F. Betz, Suckling, Robertson, Macewen, Benecke Murawjeff, L. Burns, Kohlrausch, Gilles de la Tourettes, A. Chipault, Capellari, de Paoli, A. Mori, Marburg (1911), E. Ebstein, E. Phleps, Van der Scheer, H. Koeppe, Böttiger, Oppenheim, Rasdolski, W. W. Seletzky, Fumarola, Artom, Benedek, H. Tarerka, Thurzo, A. Slauck, Varady-Szabo, O. Korner, R. v. Wild, H. Eulenstein.)*

### METHOD I.

In 1923, after having employed it for six years, I gave a description of my first percussion method with which I aimed at utilizing the percussion transonance chiefly in diagnosing processes on the surface of the brain and on the cranium. The instrument consisted —1.) of a steel cylindrical plessimeter which is connected with a grip by means of an axle and a bent arm; 2.) of a percussion hammer; 3.) of a phonendoscope. The examiner draws the plessimeter slowly and in uniform linear and radial movements over the diseased spot, while from



a height of about 1/2 cm. he gives continuous taps on the tapping-surface, of various intensity, according to the transonance, but in general light and short. With this method of percussion, I and other authors succeeded in determining scars, arachnoid cysts, and aerokels with greater exactness. I here refer the reader to the verifying operation-protocols of the surgical and otological clinics.

### METHOD II.

As the strength of the stroke as well as the height of fall depends on the individuality and also on the muscle-tension conditioned by the mental setting, I endeavoured to proceed *objectively* with the sound-production. I should like to remark here that because of the bony cranium-wall, the percussion suffers nothing from the absence of the touch-reception. I therefore contrived an automatically functioning percussion-apparatus driven by clock-work, which was constructed in the *Suss Nandor Percisions-Mechanical Institute* in Budapest. In this construction, the handle of the percussion-hammer was in the form of a swinging lever bent round a pin, and the arm was drawn by a spring in such direction that the hammer moved against the base. The shaft, on which there is a nub, is driven by the clock-work through a cog-wheel. When the shaft revolves, the nub works on the heel of the hammer setting it in percussion-movement. The pad and the regulating-screw project from the case. This screw by tightening the spring, regulates the strength of the stroke. The clock-work is wound up with a key, and set in motion by pressing on the driving-spring. The interval between the hammer-strokes was 31/50 sec. with the first apparatus, or about two strokes per second. With *the new improved* apparatus, *Type No. II*, the accompanying noise is eliminated, and besides, the frequence and intensity of the percussion-strokes are more easily regulated and with greater range.

### METHOD III.

In order that the percussion-frequence may be altered as required without the bulkiness of the apparatus detracting from its handiness, and that it should operate continuously, we constructed the third apparatus with a noiseless motor and flexible shaft. The spring, which may be regulated by a screw, presses the movable hammer on the elastic caoutchouc pad which projects from the bottom of the case. The pad is in contact with the skull. In the cavity in the side of the hammer is situated an eccentric to whose axis is connected a driving spiral-gear. The gear is connected to a flexible shaft driven by a motor. For the latter I chose the noiseless Embda-motor which hangs from a wall-bracket, and whose speed can easily be regulated by a foot-switch.

The auscultation is supplied by a pick-up-microphone-amplifier system. The oscillations induced in the touch-arm of the pick-up, set in motion a tiny movable iron bar between two strong magnetic poles. The induction-current thus produced is conducted to the grid of the amplifier-tubes, whereby intensity-fluctuations of greater energy are generated in the circuit of the anode. The strength of sound is regulated by a potentiometre. The milliampere-metre on the front of the apparatus shows some 7—8 m. amperes, and swings from rest only on ensuing distortions. The amplifying system, equipped with audion tubes, increases the percussion-sound, and also increases the volume and changes the tone, as it emphasises those partial sounds which on account of their faintness were formerly lost for differentiating.

The numerous percussion examinations carried out on normal craniums showed that the fullness and loudness and even in a slight degree the pitch of tone differs according to the thickness of the bone. For this reason, I applied myself to the precise measuring of cranium thicknesses in order to ascertain the topographical distribution of normal thicknesses and its influence on sound-production. The difficulty in carrying out this project was that there was no absolutely reliable apparatus for measuring the thickness of craniums. I therefore contrived an apparatus which measures cranium-thickness exact to 1/100 mm., and whose essential parts are,—measuring-screw, measure-scale, micrometre-screw, and the fixing-plate. To take the measurement, we bore the cranium with a borer corresponding in thickness to the shank of the screw. The shank is then placed in the bored hole. After fitting on the fixing-plate, the measuring frame is closed on the skull by means of a screw, and the result is read to 1/100 mm. To assure that the bored hole falls perpendicular to the tangent, so that its length will be the real thickness of the cranium, I constructed and applied an extra apparatus, called the "richthulse" (directing-sheath), which is advantageously employed at the surgical clinic in trepanations. We measured 70 non-macerated skulls, each at 16 points, the results of which I worked up biometrically. The measuring was done partly on already known anatomical points, and partly on points determined by calculation. At some points the distribution of thickness approached the ideal binomial curve. We ascertained the extreme values, the variation widths, the medium values, and the standard-deviation, that is, the spread and the medium error in respect to the 70 and in respect to the selected 18 ideal occurring craniums. We also measured the proportional thickness of the fields falling between those taken, in the accomplishment of which the anatomical institute lent us its aid. The measuring was done on small sections of bone. Our charts of topographical thickness are made according to medium value on the ground of



methodical valuation of the results of these thickness-measurements. This methodical work was of the utmost exactness. Having convinced ourselves that the percussion-sound of the cranium remains constant in intensity and duration corresponding to the thickness—variation of the cranium, although fine differences are to be perceived, I divided the cranium-arch into thickness-areas to which I gave either names already used or new anatomical names, as necessity demanded.

In order to facilitate the recording of percussion-sounds, we constructed a chart of concentrical arcs, in the upper left quadrant of which are represented the loud, medium-strong, and soft sounds as they arrange themselves according to the variations of the magnitude of the oscillation-amplitude. The upper right quadrant registers the full, less full, and empty sounds, in accordance with the duration of tone. In the left lower quadrant are the tympanic, the tympanically coloured (that is, those corresponding approximately to the regular sinus-curve), as well as the non-tympanic sounds; while the right lower quadrant, corresponding to the oscillation-frequence, registers the high, medium high, and deep sounds. The upper and lower half of the inner smaller circle serves to represent the metallic and the "cracked-pot" sounds. The hatching of the respective segment renders easily possible the registering of all the combinations.

Our percussions carried out on numerous normal individuals, convinced us that without air-inflation the percussion-sound of the cranium, loud, or medium loud, full, or less full, are not tympanic. In regard to the pitch, we made numerous experiments by comparing with a tuning-fork. According to subjective estimation, the sound of the adult cranium is near to "lower F. sharp". It was only with infants that we sometimes found in the temporal area a deeper sound corresponding to "lower D". In comparing the pitch with the tuning-fork, we were often obliged to be content with the determination that the differences in tone-colour are capable of imitating differences in pitch. In the territory of higher frequences more oscillations are necessary, in that of lower fewer oscillations, for the subjective determining of the sound. It is further known that in the sphere of the various oscillation-numbers, also the intensity of the sound is liable to subjective deceptions. The successively produced tones are held to be equally strong in spheres of high tones with small amplitude differences, and in spheres of deeper tones with greater amplitude differences. The adult normal cranium is far surpassed by that of the infant in richness of sounds. The sound is fuller: the angle-elongation produced by the percussion stroke is greater since the cranium is more elastic; not seldom tympanic colouring, is found; the fontanellae are often marked by sounds approaching the metallic which are characterized by piercing and high over-tones; near the sutures there also occur the "sound of cracked pot".

We tried to register the vibrations arising on the cranium also in an electrical way. To this aim we applied several systems, and were assisted by the Budapest Technical College, and Paul Halàsz over-engineer at the Ganz Factory. A part of the oscillation-diagram was adopted through a combined oscillograph system on the ground of the following plan. The tension-changes in the pick-up caused by the oscillations, are sufficiently strengthened by means of a condensor-resistance-amplifier. Behind the pick-up and pre-amplifier a tube-amplifier is also connected through a condensor, and to this the oscillograph is switched in by means of an exit-transformer. The oscillations of the oscillograph are photographically fixed by means of an Edelmann registering apparatus. The time-signal is given by the alternating-current of 50 periods with the aid of the oscillographs.

The cranium-vibrations received through this combination excite parallel oscillations in the little iron bar of the pick-up, which, transformed into electrical vibrations and strengthened, are registered on the oscillograph. We must, therefore, consider the oscillograms thus obtained for the oscillations of the dot-system of the cranium as being to a certain degree characteristic. By placing the touch-arm on the ophrion-point, and percussioning the occipital and temporal-points with Apparatus II, we got the diagram. In these, the excursions reach their greatest amplitude with the third oscillation, and then irregularily fade away. The oscillogram produced by the temporal point is striking for the large and steep elongations of each of its oscillations. This is perhaps due to the thinness of the squama temporalis. And also, the oscillation number rose from 350/sec. of the inions to 400/ sec. The whole oscillation course as well as the decreasing of it, is irregular, probably because of the influence of the disharmonic formants. The behaviour of the oscillogram on a patient, A.K., suffering from an arachnoid cyst was very interesting and stimulating to further experiments, as the amplitudes of the oscillation-excursions taken on the left parietal territory were strikingly low in comparison to the elongations arising on the contra-lateral points. This is the same point at which the percussion-sound was damped and empty. The operation found at this point a thickening of the dura and an arachnoid cyst, thus verifying the percussion finding. I made a tone-film of this case, which I displayed in my lecture given at the invitation of the *Association for Psychiatry and Neurology* in Vienna. The oscillation curve showed that the difference manifested itself not only in the reduction of the oscillation-intensity, but also in the decreasing of the interval of the vibration. There were also certain differences regarding the oscillation-number, as they amounted to 325/sec. over the diseased side and yet 375/sec. over the healthy.



The oscillogram taken with the Ganz condensor-microphone showed me curve-types which entirely differ from those thus far described. The first powerful and steep oscillation was followed by another eight oscillations reminding one of more regular sinus-movements; and then the wave-movements stopped. The number of the oscillations aroused by the percussion-stroke made 37·4/sec. according to our reckoning.

We applied also the Ganz vibrograph for taking the oscillations. with whose reception-pendulum with electric transmission of 1/100,000 mm. oscillation-amplitudes can be registered. The aluminium case changes its position to the pendulum fastened in its interior. By electric transmission and by means of the microphone-case, the swing is projected on a photographic film through the mirror of the microphone-case. The very slow "base-oscillations" fall on the vibrogram: those with an oscillation number of 24.5/sec. lie on the lowest limit of audibility. The above described first impetus is also seen here. The sounding of the chief wave-movement follows regularly the so-called "simple damped" oscillation-type, log. S.=35 %.

We prepared further diagrams, using the Farenczy vibro-indicator which is a cylinder built in an iron frame, and through whose piston a groping steel point seeks contact with the swinging body, while the inner end, by means of a driving bar, causes a mirror to vibrate, whereby the so projected light-stripes can be photographed on an endless band. The curves recieved with the vibro-indicator stand very near to the so-called critical and "aperiodic damped" oscillation-curve. The inactivity of the vibrograph as well as the vibro-indicator manifests itself in that the effect of the high frequences on the oscillation-curve greatly decreases. From the comparing of numerous curves it appears that the high formants of the cranium percussion- sounds are rendered inactive because we have here to do with weak over-tones. The oscillogram and vibrogram may be analysed by way of measuring and calculation. The analysis seeks the "harmonical" corresponding to the Fourier row. It seeks the ground-curve of an ordinate drawn from point "O" to any desired distant point, both in the positive and in the negative phase. We measure on the verticle the value of the mathematical sum, and so obtain the graphicon of the harmonical over-tone.

With the inflation, the percussion-process won a very important support, and also the extent of its usefulness was greatly increased. The neoplasmas of the hemispheres and also the intraventricular and subtentorial tumours reduce the homolateral side-ventricular cavities. The vanishing of the resonator-cavity, or the reduction of the volume, accompanies the decrease of fullness and loudness of the sound and the preference for high tones, along with the loss of the

tympanic character or its pronounced tympanity. By means of the "threshold percussion" we can even determine the decrease of the air-content of the subarachnoid spaces.

With our patient, Mrs. H. F., suffering from subtentorial tumour, on July 27, 1931, directly after a successful suboccipital inflation, a pronounced tympanic percussion-sound was to be heard in the left side area temporal and parietosquamosa reaching up as far as the tuber parietal, in contrast to the less full and softer percussion sound of the symmetrical side. This percussion-finding was corroborated by the encephalogram done at the same time according to which the front horn of the left ventricle was greatly enlarged, and the right ventricle compressed. In the lateral taking, the upper edge of the left side ventricle was displaced upwards in its whole extension.

Our patient, Mrs. I. K., suffering from cerebellar tumour, showed at the cranium-percussion performed July 17, 1931, before the pneumokephalic inflation as well as after it, without any change, a damped percussion-sound in the cerebello-occipital area, on both sides (!), whose upper boundary was formed by the right and left branch of the eminentia cruciata. The encephalogram convinced us that in consequence of the complete blockade, the air-filling of both subarachnoidal and ventricle systems was entirely lacking. I recommended the operation.

The operation, performed in two phases, found a cyst the size of a small egg between the left cerebellum hemisphere and the tentorium, containing a liquid clear as water. While recovering, the patient contracted a heavy pneumonia and died six weeks after the operation. The dissection showed—corroborating the clinical diagnosis—a right side ponto-cerebellum-corner tumour (neurofibroma n.acustici). The result of the percussion was satisfactorily explained by the finding of the operation and the dissection, for the right side ponto-cerebellum-corner tumour had caused the solid damped percussion-sound in the right area cerebello-occipital as the cyst of the left side had done.

The case of I. M., a girl suffering from cerebellar tumour, was interesting. At the examination, it gave a damped and empty circumscript percussion-sound in the left cerebello-occipital area. Directly above this territory, corresponding to the left branch of the eminentia cruciata, or the elastic sinus transversus, a bordering bow-shaped stripe was to be detected, which was characterized by a percussion-sound only more damped and less full. The operation showed that on the one hand, before the opening of the dura the left hemisphere was strongly bulged in comparison to the right, and on the other hand, that the left cerebellum hemisphere after forming a a dural lobe, prolapsed irreparably. The clinical observations of *Bruns* and experiments of *Schifone* show that an increased inner



pressure is essential to a brain-prolapse. The operation as well as histological examination of the dissevered suspected tissue showed that the brain-tissue was oedematously swollen. It is true that the operation had to be quickly ended without the tumour having been extirpated, owing to asphyxia suddenly setting in, yet besides the papilloedema and the half-sided cerebellar-pontine symptoms, the operation finding proved also the presence of a congestive process corresponding to the left cerebello-occipital area. A tone film was made of the percussion finding of this case, which I gave in my lecture in the International Neurological Congress in Bern, and in the Association for Psychiatry and Neurology in Vienna.

In a patient, Mrs. J. S.. with a tumour of the left hemisphere, a territory with irregular outlines was formed in the parietal region, whose percussion-sound seemed damped and empty, and whose extreme zone lost its dampedness and emptiness. The percussion-sound of the central territory seemed to be deeper, likely due to the thinning of the bone. The dissection verified the result of the percussion, since according to the dissection protocol, the flattening of the brain-gyri, especially on the left side in the district of gyrus centr. and sulc. praecent. was most pronounced. The tumour had the form of a glioblastoma multiforme.

The next case had to do with an osteoma durum of the skull. The alteration presented the form of a serious cranium-deformity from birth. The percussion finding, however, made it clear that it was a case of an exact circumscript solid volume-enlargement giving a damped and empty percussion-sound. The diagnosis was confirmed by the X-ray-finding, according to which there was visible on the right os parietal over the tabula externa a sharply outlined shadow 6 cm. long and as thick as the little finger, and whose intensity was less than the substantia corticalis. This volume enlargement did not prey on the tabula externa and did not bulge it in. Radiographical diagnosis,—osteoma. We made a tone-film also of this case.

In the case of Mrs. L. L., the percussion according to Method I, besides the clinical symptoms which spoke for a tumour of the frontocentral region, gave the result that in the right-central and supratemp. territory encroaching on the right tuber parietal there was to be heard a medium-high, nontympanical, damped and empty percussion-tone which towards the back gradually lost from its emptiness and from the solidity of its dampedness. On the other hand, the percussion-sound near to the corner formed by the coronarsutur and the median-line had a higher tone and almost of a tympanical colour. The examination was performed by Prof. Sarbo, and the operation by Prof. Winternitz who determined, according to the operation

protocol a diffused inoperable swelling on the fronto temporal district. The operation thus verified the percussion-finding. According to the encephalogram, the central part and the fore horn of the right side-ventricle was not filled, and was crowded to the left together with the left ventricle, compared to the middle line. In the operation, at the opened district the flattened gyri was to be seen after the formation of the dural-lobe.

Our patient, A. K. had a posttraumatic epilepsy together with an arachnoidal cyst, arising from a covered cranium-trauma got in the war. Over the arachnoidal cyst, the percussion-sound lost very considerably from its sharpness and duration of ring. This is the case I have already mentioned in connection with the oscillograph, that just on the same place corresponding to the damped and empty percussion-sound, the oscillation-curve showed the decrease in amplitude of the excursions and the shortening of the vibration-duration. In the same case the encephalogram showed a strong enlargement of the forehorn of the ventricle on this side (" hydrokephalus ex vacuo reactorius "). After the inflation, interesting changes took place in the percussion-finding, as the limits in the change in sound were more striking in the percussion of short strokes, that is with reduced spring-force, while with intensive percussion the percussion-sound became fuller on the left than on the right, and received a tympanic colour. The encephalogram explained this finding in that when percussioning with penetrating force in consequence of the ventricle enlargement the left side-ventricle with its air-containing cavity rather resounded with the cranium-percussion-sound, thus strengthening the sound. The operation showed the collapsed cyst.

With our patient, D. A., we put the diagnosis at a suprasellar tumour, which was verified by the attempted operation and the dissection. In this case, the percussion-finding after the inflation proved that the fore horn of the side-ventricle was not filled on account of the compression caused by the tumour. The encephalograph taken immediately after the perscussion-finding also confirmed this finding. It was visible on the encephalogram that only the rear part of the pars centralis, the vestibule, and the lower horn filled with air. The dissection showed us a tomour the size of a small apple, which proved to be a suprasellar meningoma.

The 51 year old day-labourer, P. J., while working on Jan. 31, 1928, was struck by a stone the size of one's fist, which fell on his head from a height of 60 m. By means of the percussion method we determined a kidney-shaped thickening of the bone which surrounded the irregular impression 12 mm. wide and 24 mm. in length in the left-side area supratemporalis front. The kidney-shaped thickening looked with its mouth sidewards and downwards. The X-ray finding



confirmed the percussion-projection in its entire extent (in spite of its quite unusual form).

After the pneumocephalic inflation, it was not seldom that we had opportunity of convincing ourselves that the change in conditon of the intra-cranial air quantity resulting from changes in the head-posture are with certainty determinable with our percussion method. We succeeded also in confirming our method through encephalograms taken.

M. P., a girl of six years, suffered from hydrocephalus ventriculorum post meningitidem. We made an inflation, and afterwards by lightly shaking the head sent the air-mass from one ventricle into the other, and controlled the result by radiography. In doing so, the percussion-sound was more intensively audible, corresponding to the air-filled ventricle over the area parasagittalis parietalis, the supratemporalis parietalis, the temporalis p., the area centralis and the tuber parietale. It was of longer duration, and besides, it contained a deeper and pronounced tympanically coloured tone.

*The percussion-method is very suitable for the examination of the passage of foramen Monroe.*

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## SURGICAL TREATMENT OF GOITRE.*

By

SURESH CHANDRA DAS GUPTA,

*Senior Surgeon and Chief Medical Officer, Bir Hospital, Nepal.*

Long ago in the year 1913, I wrote an article on " Excision of Goitre " in the Indian Medical Gazette (Oct.) in which I published 4 cases of my operations. All the four were cured. I performed my first operation as early as 1911 on a patient whom I refused thrice; but as local treatment did him no good and the tumour (cyst) went on increasing gradually, he was determined to have the growth removed by operation, no matter, even if he would die. Since then I did as many as 50 operations with two deaths. Of which one expired on the table probably from air-embolism and the other died, though he revived consciousness, after a few hours from heart failure. All the rest were cured, but 3 or 4 cases nearly died on the table and I had some moments as to their safety; however death was averted by artificial respiration, inhalation of oxygen, and hypodermic injection of strychnine, ether and adrenalin and so on. On the whole the operation of goitre is not a very difficult one; and I repeat to you

* Specially contributed to the " Antiseptic. "

the same words which I said 19 years ago that "any surgeon with a cool head and careful hand can perform it".

Now, the question is, whether surgical interference is at all justified in the treatment of goitre. The answer is of course affirmative in certain cases—when the disease is not amenable to medical treatment. In the early stage and specially in young subjects you can try fresh or dried thyroid gland, intestinal antiseptics, iodine and iodides either internally or locally; and even try X-ray, radio-therapy or vaccines; of course in many cases the thyroid swelling diminishes rapidly by the above treatment; but in some there is no relief at all. There is no doubt, the chief source of infection is contaminated drinking water; I have seen hundreds of goitre cases from a single village; so removal of the patients from the infected locality should be carried out as an item of combating with the disease.

In my opinion those cases which do not yield to medical treatment should be given up to the surgeons for a trial. If it is not operated in due time, there is danger of cancerous degeneration, calcarious deposit, tachycardia, myocarditis; besides, it also shortens life.

Pathologists divide goitres usually into 4 classes: (1) Simple hypertrophy with "an over-growth of the glandular tissue", (2) true adenoids (3) cystic goitre and (4) the fibrous variety. Of these, the cysts are the easiest to remove; and next to it any moveable tumours. Sometimes prolongations of the tumour go too deeply and too far behind the trachea or oesophagus and even under the angle of jaw, or the sternum. A beginner should not attempt any deep or firmly fixed tumour, or one of the diffused variety. He must acquire a good deal of skill and experience to operate on such cases. In the suppurative thyroiditis, operation is the only chance of recovery or relief, and should be done as soon as the abscess was localized. The opening is to be made at the most prominent part avoiding the veins, by Hilton's method. There is danger of cellulitis spreading in the neck, so that a drainage should be left in the proper place and the wound dressed with strictest aseptic precaution.

OPERATION:

The essential steps are as follows:—

(1) Preparation of the patient.
(2) Position.
(3) Anæsthesia.
(4) Line of incision.
(5) Ligature of veins.
(6) Dissection, and enucleation of the tumour.
(7) Drainage and suture.
(8) After-treatment.



The *preparation* is as usual; the head and neck should be shaved and part painted with Tinct. iodine just before operation. I usually give a hypodermic injection of morphia ¼ gr. and atropin 1/150 gr. half an hour before the anæsthesia.

*Position*: The patient is placed on the back with a small rounded pillow under the shoulders throwing the head down in order to fully *extend* the neck. According to Treves "the chin should be kept in a line with the sternal notch", so that there may be no deflection of the trachea or change of anatomical parts. But if one side be affected, the face is turned to the side opposite to that of the affected.

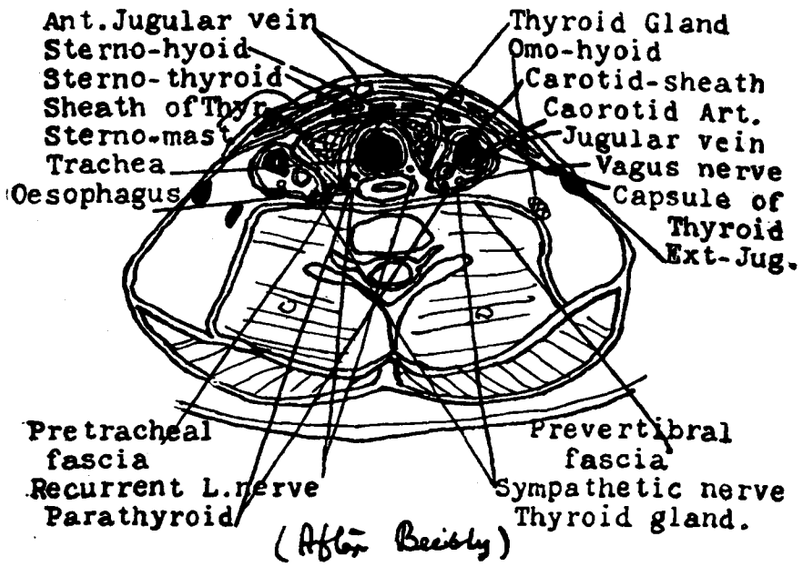
There is no hard and fast rule about the *line of incision*: Incision should be made in such a manner that the delivery ("exteriorisation") of the tumour be easy; that's all. If both the lobes are affected a curved transverse incision with convexity downwards is the best: and the lower border of the incision should be near about the inferior border of the tumour but if the tumour be one-sided it is better to make the incision over the most prominent part of the tumour from one end to another. Above all the incision should be *free*.

*Dissection*: After the skin being divided the subcutaneous fascia with Platysma myoides comes in view; they are usually adherent, and should be divided in the line of original incision.

Next, we come in contact with sterno-hyoid, omo-hyoid and sternothyroid muscles; they are usually thinned out as a sheet of paper and are almost unrecognisable when the tumour is very big. These muscles are divided higher up (in order to preserve their nerve supply) if only they happen to obstruct the delivery of the tumour. Then we meet the *pretracheal fascia* which is firmly adherent to the cricoid and thyroid cartilages posteriorly; laterally, it blends with the anterior wall of the carotid sheath, and anteriorly it forms a *sheath* for the thyroid gland. Overleaf you will find a rough diagram of a transverse section of the neck, so that you can recapitulate your memory about their anatomical relations:—

Both the lobes of the thyroid gland are completely enveloped by this pretracheal fascia (which we will call the "*sheath*") and its ramifications, and in the centre the isthmus is held firmly over the 2nd and 3rd rings of the trachea and sometimes it is wanting. Besides this *sheath*, there is another covering of thin connective tissue which projects into its substance and is the real capsule of the gland. You can compare the outer sheath with the parietal portion of tunica vaginalis and the inner *capsule* with the visceral layer. The space

in-between is loosely connected by thin connective tissues. The capsule is thin, shining and reddish, and looks just like oil-silk. In this operation it is very important, that you should learn to recognise these two structures (sheath and capsule) at once. The whole success of the operation depends on the enucleation of the gland at the correct depth *i.e*, between these layers, without injuring the capsule in the least. If you damage the capsule there will be profuse bleeding and sometimes very difficult to control. Either you should stitch up the opening or hold the edges of the wound together by pressure forceps. Kockers' forceps causes punctures in the capsule or the vessels and should not be used.




Of the vessels that concern us in this operation are superior, Inferior thyroid and occasionally thyroidea-ima arteries and superior, middle and inferior thyroid veins. The veins form a plexus on the surface of the gland and cause formidable haemorrhage if roughly handled. The best advice that I can give to a beginner is that each and every vessel (specially a vein) should be doubly ligatured and divided in-between by scissors leaving about $\frac{1}{8}$" of the vessel outside the knot. If the vessel be a big one, always clamp the *ends* with a pair of pressure forceps, so that in case the knot slips, you have additional guard against haemorrhage. On the outer sheath the vessels ramify and both superior and inferior thyroid veins and arteries pierce the sheath of the gland at the upper and lower "poles", and should be secured *within the sheath* cleanly, and close to the gland.



Now, the sheath having been opened in the median line almost along the anterior border of the sterno-mastoid muscle, the gland should be separated with the capsule intact by gloved finger or simply blunt instrument e.g., dissectors, handle of the knife, or the blunt point of curved scissors (on the flat)—with the concave surface applied against the convex surface of the tumour. Sometimes only the *gauze* dissection is enough. If the neck be flexed too much, the structures are not well defined; if, on the other hand, it is extended too much, the thin-walled veins become almost obliterated. But following Treves' direction by having "the head lifted now and then"—which makes the vein full and distinguishable, the task is simplified. The sterno-mastoid muscle is separated and carefully drawn outwards by a broad retractor, and the outer surface of the gland is defined at first and then the upper pole; in doing so, the superior thyroid vessels are exposed by pulling forward the upper end, and secured between two ligatures within the sheath and divided in between. Next, the lower pole is pulled up forwards to define the inferior Thyroid artery and vein and treated similarly. If the sheath is left intact postero-medially, the recurrent laryngeal nerve which crosses the artery in this situation, will not be seen, since it lies outside the sheath (Beesly and Johnston). Again, the recurrent nerves on both sides ascend in the groove between trachea and oesophagus, so that unless you go too deep by the side of trachea, you have no fear.

The main *points* in this operation are (1) the thorough securing of the superior and inferior thyroid vessels, (2) and avoiding injury to the big veins of the neck, recurrent nerves, true capsule of the gland, trachea and oesophagus and parathyroid glands. The last named glands (parathyroids) are small pea-like structures, two in number—one on each side, which lie in the "tracheo-oesophageal angle" behind the thyroid gland and are found usually embedded in its fibrous sheath. The removal of these bodies leads to tetany and death. Beesly). The recurrent nerve lies almost at the same depth and a little to its inner side.

During the operation you have to be very careful in saving these structures, and at the same time to avoid unnecessary compression and traction of the trachea, which may cause spasm or even asphyxia.

The last stage of operation is the complete severance of the tumour from its base. After separating the upper and lower poles of the gland up to the isthmus—above and below—both anteriorly and posteriorly, you have only to apply an *interlocking* suture to the base (isthmus) and divide it above the ligature. That finishes the opera-

tion. From the beginning to the end you must examine thoroughly each and every resisting structure or any suspicious tissue by *feel and sight* and then divide it when you are sure of the identity.

Now, examine the wound thoroughly. Secure all the bleeding points; trust not even a small bleeding twig, put a ligature at once; next, swab the cavity, stitch up the capsule, connect the divided muscles by catgut sutures and finally close the wound with silkworm-guts. If there is any oozing, better leave a drainage of silkworm-gut for 24 hours; if not, no need. The wound is then painted with Tr. Iodine and Benzoin and dressed and bandaged.

*After-Treatment*:—After operation the patient is transferred to his bed and kept in dorsal position with head flexed and relaxed on a pillow. A nurse should be on duty for at least 6 hours. Nothing but sips of tepid water is allowed for the first 24 hours, as there is always difficulty in swallowing. On the 2nd day the patient is kept in reclining position, as there is usually danger of hypostatic congestion of the lungs. A little Tr. Camphor Co. with Spt Ammon Arom. and Syr. Tolu often soothes the cough or prevents an attack. The wound should be inspected on the third day; if there be any oozing or accumulation of secretion it should be let out by passing a director into the wound from below upwards, and then dressed and bandaged. The stitch is removed on the 8th day. A slight swelling may be left which subsides by application of Iodine daily. Sometimes a small sinus may be left, which usually occurs from the presence of unabsorbed ligatures. No. 00 or 000 ultratan catgut is the best stuff for ligature. Silk often gives trouble.

It will be interesting to note that many of my patients who were quite idiotic, improved considerably after the operation. Nearly half of my cases came to me to get rid of unsightly masses (specially young women), and also to have admission in the army (particularly young men).

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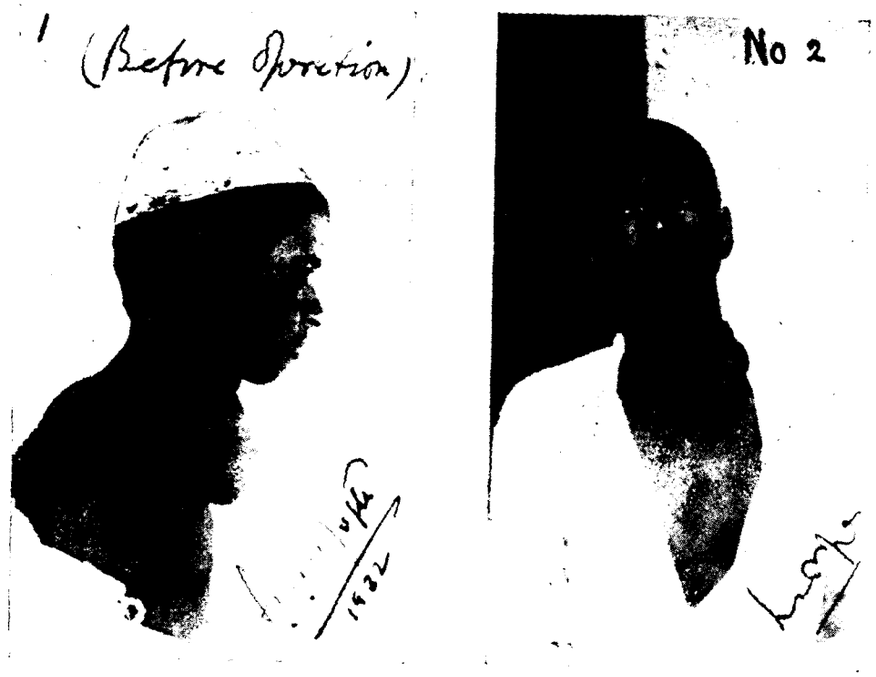


No. 1. Simple hypertrophy (pendulous). No. 2. Adenomatous—with separate lobules. No. 4. You see the section of the tumour, in the centre of which you notice a haemorrhagic spot.

*To face page 656.*

# PSYCHOLOGICAL MEDICINE*

BY

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Today we have reached a stage when we cannot afford to isolate psychiatry from general medicine, nor consider prophylaxis in psychiatry less important than in any other branch of medicine. With the inclusion of psychiatry in the medical curriculum has disappeared the sense of "states unknown" which used to make the physician shun such cases until something strikingly morbid appeared and which left no course but certification and confinement of the patient in the asylum. Before prophylaxis can be effective, it is important that the physician should be conversant with various aspects of this deficiency. With this object in view I shall write a series of articles, which will enable the practitioner to take more interest in this branch of medicine and be equally useful in the same. At present aetiological factors being unknown, gross pathological changes being insufficient, symptamotology being varied, every attempt at the classification has been controversial. I shall therefore treat this subject in a way which I think will be most useful to the general practitioner.

## I

*Psychological Processes.* –These processes should be studied because :—

(*a*) They are disorganised in certain mental diseases.

(*b*) They have an important bearing on psycho-analysis.....an important procedure in psychotherapy to be dealt with later.

*These processes are* :—

*1 Consciousness* —i.e. unity of ideas, feelings, volitions etc whereby under normal mental conditions, an individual is able to direct his actions. Disorders of consciousness are :—

(*a*) Stupor, (*b*) Coma, (*c*) Delirium, (*d*) Hysteria, (*e*) Trance. I shall deal with them by and by.

Sub-conscious mind.—This is mental state outside the field of attention.

Un-conscious mind.—Conception of this is the basis of Freud's school of thought.

This school considers that mental phenomena are capable of psychological explanation, without reference to physiological processes occurring in the brain, and it is possible to explain mental

* Specially contributed to the "Antiseptic."

processes by scientific laws involving psychological terms only. Existence of a psychical process of which the subject himself is entirely unaware is assumed. This is the conception of unconscious mind.

(2) *Sleep*: Natural loss of consciousness. There are many theories regarding the true nature of sleep, but I shall briefly mention the most important.

### i. INTOXICATION THEORY.

Aristotle having determined the insensibility of the brain to mechanical irritation during sleep maintained that this organ was the organ of sleep. According to the theory of intoxication, toxins are produced by mental or physical energy, which act as narcotics in the nerve centres, but don't interfere with the function of any other organ save that of the brain. This is a form of "Physiological auto-intoxication" with selective action on the brain only.

### ii. CEREBRAL ANAEMIA THEORY

This theory postulates cerebral anæmia arising from the fatigue of nerve centres which control the "arterial tone." Fatigue of nerve cells is produced by histological observations, which show that nissel spindles disappear from nerve cells during the day but are restored during the night's rest.

### iii. SYNAPSE THEORIES

These are two opposite theories. One postulates lessened resistance at synapses, so that nervous impulses can flow in every direction without arousing any definite train of thought. The other assumes increased resistance at synapses, so that there is flow of nervous impulse.

### iv. GEMMULE THEORY

This theory is somewhat allied to synapse theory and is based on the assumption that gemmules or dendrites are retracted during sleep. The receiver is as if laid down, and the incoming impulses therefore fail to arouse consciousness.

*Disorders of sleep are :—*

(*a*) Insomnia.—This is a frequent symptom but an occasional cause of insanity. Its importance lies in its relation to treatment of certain mental disorders.

(*b*) Dreams.—Dream represents the imaginary fulfilment of an unconscious wish—wish which can obtain gratification in no other way. Deeper meaning of a dream constitutes Freud's "latent content." In children, the repression of complexes has not taken



place and the wish is therefore undisguised, but in adults the wish is usually distorted so that it is unrecognisable.

*Basis of a dream is* :—

i. Some incident, (recent of physical importance).
ii. Some memory, (usually of childhood).
iii. Some fulfilment of an unconscious wish.

Freud maintains the essential symbolization of dreams as a cloak for sexual idea. Sexual activities often perverse, occur mentally in period before puberty constituting 'mental trauma.' These may be repressed by the subconscious mind where they remain unneutralized though forgotten by the conscious mind (libudo)—They are capable of resuming activity later and in certain circumstances these sexual trauma though still remaining subconscious, influence the conscious mind and by association with emotional disturbances give rise to a complex *eg*: hysterical manifestation. By psycho-analysis and study of dreams, the physician patiently drags out the skeleton, exhibits it and lays the ghost. Freud has carried his theory to a great length and his attention has been one-sidedly centred upon "psychic trauma of genital nature" although he uses the term "sexual" in reference to the instinct of race propagation rather than matters of sensuality.

Bad dreams are warning of impending relapse in certain mental cases and should be noted.

(*3*) ***Hypnosis*** is artificially produced ascendency of the sub-conscious states. Curative value of this requires to be explored.

(*4*) ***Memory*** is revival of past impressions, which may act more through one special sense than another.

*Disorders of memory are* :

(*a*) Amnesia.....loss of memory.
  i. Partial.....(old age),
  ii. Temporary.....(shock following injury).
  iii. Progressive.....(general paralysis of insane).
  iv. Periodic.....(somnambulism).
(*b*) Hypermenesia.....exaltation of memory.
(*c*) Paramnesia.....perversion of memory.

(*5*) ***Sensation***...depends on special senses etc : and any one may be affected.

(*6*) ***Perception***...is usually derived from sensations.

*Disorders of perception are* :

(*a*) Illusion. False interpretation by the mind of a real sensation, capable of correction.

(*b*) Delusion.—False belief, falsity of which is apparent but out of which person can't be reasoned out by indubitable evidence.

(*c*) Hallucination.—False sense perception of an object or phenomenon, which has no external existence. It may be of any sense *eg*: sight, smell, sound, taste or touch.

(7) *Instinct*...Inherent prompting to a certain line of action. There are three primary instincts: i. Self. ii. Sex. iii. Society (Herd)

Any hindrance to a satisfactory carrying out of an instinctive tendency results in storage under pressure of vital energy (libudo) and this with associated emotional disturbance gives rise to a complex. Complexes result from (i) rivalry between primary instincts corresponding to the three great instincts of self, sex and herd or (ii) accidental and particular complexes—extentions of self-complex *eg*: those associated with hobbies, games etc:

(*a*) Self or ego complex.

This is made of two groups:—

i. Self assertion with pugnacity, acquisition and curiosity.
ii. Self abasement with repulsion and flight.

(*b*) Sex complex.

The aim of this is reproduction. The psychology of two sexes differs. Thus features of male are:—i. Katabolism or activity. ii. Sensibility to influences derived from the female. iii. Continual sex life of long duration. iv. Contrifugal activities; while the features of female are:—i. Anabolism or passivity, ii. attractiveness, iii. periodic and relatively limited sex life, iv. centripetal activities.

(*c*) Herd complex. This implies submission of the conation of the individual to that of herd, based upon a kind of sympathy which renders the individual mind vulnerable to suggestions coming from fellow beings. Morality, convention, etiquette are matters of conduct regulated by herd law. Frequently sexual and other instincts struggle for mastery *eg*: conflict between sex and herd with violation of moral code when sexual instinct is gratified in a way not approved by the rest of the society—(Cf: King Henry VIII and his wives). Similarly a conflict between sex and self or ego—a rivalry between amour and ambition...(Cf: Napolean Bonaparte and Josaphine).

These instincts are disordered in insanity: i. in melancholic ii. suicidal iii. sexual perverts (masturbators).

(*8*) *Volitional acts.*

These are all common actions into which there enters an element of conscious "choice." Some are individually disordered. "Determinist" school of thought says that there is no "choice."



*Psychoanalysis.*—Object: To obtain insight into 'patient's' modes and habits of thought and to trace them to their origin. Dreams are examined with care, being regarded as a direct expression of unconscious mental processes and the ideas presented in them are submitted to the process of 'free and time association.' Thus buried complexes are raised again into memory. I shall discuss the details of this 'free and time association' experiments under psycho-therapy.

Most suitable cases for psycho-analysis are:—

(*a*) Neurasthenia and hypochondriasis.

(*b*) Hysteria, obsessions, morbid fears...psychasthenia.

(*c*) Exhaustion states.....insanities due to worry and overwork.

(*d*) Traumatic neurasthenia.....shell shock.

There is a word of warning regarding psycho-analysis and that is its potentialities of doing harm, if undertaken by incompetant and ignorant psycho-analyst.

*(To be continued).*

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## STUDIES IN INDIAN MEDICINE*

By

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*(Continued from p. 398, Antiseptic, June '32).*

### ANATOMY AND PHYSIOLOGY.

In every text book on Ayurveda, under the heading *Sareera Sthana* details about the structure and functions of the human system are dealt with. For a complete understanding of the medical science, dissection on a dead body is advocated especially by Susruta who treats of many surgical methods. He compares a person who studies the actions and uses of medicines only and not the art of surgery, to a bird flying with one wing. The anatomical details and the physiological principles as given in these ancient books, form an interesting study by themselves: but here only those portions that are relevant to our practical needs are described.

The whole process of digestion and growth is the resultant of *tridoshas* and what are called *Agnis*, acting upon the food, water and air taken in. About the three *doshas*, we have already studied. *Agni* is a new entity. It is the term applied to the energy responsible for the various metabolic changes taking place in the human organism. There are three kinds of *Agnis*.

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First is the *Jataragni* situated between the *amasayam* and *pakvasayam* (stomach and intestines). It carries out the primary changes in the food product before actual absorption begins.

The second kind is called *Bhutagni*. It is five in number according to the *pancha-bhutas* viz., *Parthivagni*, *Apyagni*, *Tejasagni*, *Vayavyagni* and *Akasagni*. Each of these *agnis* digests the respective *bhuta* in the food taken in, as then only our body constituted as it is of *pancha-bhutas*, can assimilate and form its supporting structures i.e., *Dhatus*. They are like the carbohydrates, fats and proteins prepared from the food by the digestive juices for the formation of the body tissues, as described in modern physiology.

*Dhatvagni* is the third variety. It is responsible for the *Dhatu*-Metabolism or tissue-building. Corresponding to the seven *Dhatus* there are seven *agnis* viz., *Rasadhatvagni*, *Raktadhatvagni*, *Mamsadhatvagni*, *Medhodhatvagni*, *Asthidhatvagni*, *Majjadhatvagni* and *Sukra or Arthava-dhatvagni* (according to male or female). Each *Dhatvagni* prepares the *Dhatu* pertaining to it from the panchabhutically divided food substance, just as the epithelial, connective, muscular and nervous tissues are built up from the proteins, carbohydrates and fats of the digested food product.

Before considering the mechanism of digestion, the terms *Rasam* and *Vipakam* need explanation. By *rasam* is meant the primary tastes of substances as perceived by the tongue. They are six in number viz., *Mathuram*-Sweet, *Amilam*-Sour, *Lavanam*-Saline, *Katu*-Pungent, *Thiktam*-Bitter, and *Kashayam*-Astringent. Each taste has got definite properties and effects on the body. These will be dealt with when studying the action of drugs. Now about *Vipakam* —though the tongue recognises six tastes, when the food reaches the stomach and intestines for undergoing *Pakam* (digestion), it is resolved into three tastes. This metabolic transformation of the *Shadrasas* into three is called *Vipakam*. *Mathura-Vipakam* means change to sweet, *Amla-Vipakam* change to sour and *Katu-Vipakam* change to pungent. All sweet and saline substances assume *mathura-vipakam*, sour things take up to *Amalavipakam* and pungent, bitter and astringent tastes get converted into *Katu-vipakam*.

The process of digestion is as follows:—In the mouth food taken in, gets grouped according to *shadrasas*, by the *Bhodhaka Kapam* therein. Then the *Prana vayu* sends it down to *Amasayam*. Here the *Kledaka Kapam* emulsifies the food and acts upon the sweet and saline substances producing a state of *Mathura vipakam*. *Kapa dosha* dominates in this condition. That portion of the *amasayam* called *Grahani* (pyloric part of the stomach) holds this semi-digested food stuff and passes it on in a regulated manner to *Pachimamasayam* (duodenum) where the *Jataragni* begins its action, stimulated by the *Samana Vayu* and aided by the *Pahaka Pittam*, all situated therein.



The result of this process is that the sour things get metabolised and the food product assumes a condition of *amla-vipakam*. The combined action of the three juices viz., pancreatic, biliary and intestinal on the chyme, may be approximated to this stage of digestion. *Pittam* is the prominent *dosha* here. Further action takes place in the *pakvasayam*. *Pachaka Pittam* continues the process of digestion. Food is converted into *Katu Vipakam* by the metabolism of the pungent, bitter and astringent substances. It also gets divided into an absorbable part (*prasadic* state) and an excretory portion (*kitta* state). The liquid elements of the excretory product passes away as urine while the solid portion is converted into faeces. In the absorbable part, *Vata dosha* asserts its activities, as the end-result of all processes is the maintenance of *vayu*—the dynamic factor of the human organism.

At this stage, the five *bhutagnis* come to act on the final fit product of *Jataragni* digestion. The *Parthivagni* plays upon the *parthiva* elements in the food and renders it capable of being absorbed by the *parthiva* tissues of the body. Similarly *apyagni*, *tejasagni*, *vayavyagni*. and *akasagni* act upon the *apya*, *tejasa*,, *vayavya* and *akasa* elements of the food, making them fit for being used by the respective tissues of the human body.

The next step in the process of digestion is the formation of *sapta-dhatus* by the *Dhatvagnis*. First is the production of the *rasa dhatu*, by the *rasa dhatvagni*. While circulating in the liver and spleen *rasam* gets coloured red by the *ranjaka pittam*. Then it divides into three parts. One portion is retained as *rasam* itself to form part of the *sapta dhatu* integrity of the organism. The other part is excreted as gross *kapam*. The third portion is acted upon by the *rakta dhatvagni* and gets converted into *rakta dhatu*. In a similar way, the rest of the *dhatus* and *malas* are formed and excreted. The excretory product of *raktam* is the gross *pittam*, of *mamsam* the secretions from the nose and ear, of *medhas* the sweet, of *asthi* the nails, of *majja* the hair, of *sukram*, *artha* or *arthvam* the oily portions in the eye, skin and fæces. Every one of the *dhatus*, besides its division into three portions, produces during the course of its metabolic transformation the peculiar subtle essence called *Ojas*.

The two upper extremities, the two lower ones, the trunk and the head and neck are all permeated and built up by the *saptadhatus*. Whether it be heart or liver, brain or spinal cord, nerves or blood vessels, to a Hindu Physician, it is all a make up of the *saptadhatus*. *Rasam* is the primary nutritive fluid giving the energy and matter needed for every other *dhatu*. *Raktam* is the first formed element of the body and is taken to be the life fluid. *Mamsam* fills up all the irregularities of the organism and maintains its tone and strength. *Medha* does the function of lubrication to the system. *Majja* fills

in the hollow portions of the *asthi*. *Sukram* in the male and *arthavam* in the female are combinedly responsible for the phenomena of reproduction. The quintessence of the *dhatus* viz., *Ojas* maintains the *dhosha-dhatu mala* equilibrium of the system and controls all its life activities.

Regarding the anatomical details in Hindu medicine, there is much controversy. Especially about the nervous system and what are called *Marmas* (vital points where arteries, veins, nerves, ligaments muscles etc., abound) and *chakras* (nervous plexuses) there is so much of abstruse and mystic literature that to enter into them, would mean, passing beyond the bounds of modern science. Apart from the *doshas, dhatus* and *molas*, to a Hindu physician in his daily practice. the conception of the human anatomy is as an entity with nine openings in the male—the two eyes, the two ears,the two orifices of the nose, the mouth, the anal orifice and the urinary meatus and twelve in the female the vaginal opening and the orifices of the galactophorous ducts of the two nipples being included. The sensory organs called *Jnanaindriyas* are five in number viz., those of the sound, sight smell, taste and touch and the motor organs called *Karmaindrias* are also five viz., those that are responsible for walking (legs), doing (arms), speaking (tongue), passing stools (anus) and enjoying sexual pleasure (genital organs). The *Manas* or mind the Director of all the other organs is taken to be as the eleventh *indriya*. The details about the mental activities as *Buddi* (knowledge) *Ahankaram* (Egoism), *Smriti* (memory), *Medhai* (Wisdom) etc., form the subject of Indian Psychology and Philosopy.

For the purpose of diagnosis and treatment in Hindu medicine, the interior of the body is visualised as a net work of ducts small and big composed of the *sapta dhatus* with the three *doshas* circulating within them and the *malas* getting excreted by the various external orifices. The big duct called *Mahasrotas* or *Koshtam* is the alimentary tract beginning from the mouth and ending with the anus. Rest of the body is called *Sakas* (lateral parts). Majority of the morbid materials that may get collected in any part of the body interior, is thrown chiefly into the *Koshtam*, to be expelled either upwards or downwards. Nasal orifices are said to be the outlet for the impurities in the head. Besides these natural passages, artificial openings are made on the body surface by means of venesection, leeches and cupping to get rid of excess or abnormal body fluids.

In a normal person, like the three *doshas* though all the *sapta dhatus* constitute the frame work, some one or other dominates and characterises the features. Following are the characteristics of the various *dhatu prakritis* (diathesis). *Rasam* being only a nutritive fluid and not a formed element of the body, does not give rise to a specific *prakriti*. In a person with *Rakta prakriti*, body is smooth,



red-tinged and of a handsome make. There is a splendour in the appearance and a delicacy of the features. The person is happy, strong of mind, intelligent, incapable of bearing pain and of middling strength. *Mamsa prakriti*:—Body is heavy and the muscles are well formed and compact. They are of a forgiving and enduring temperament, uncovetous, learned, happy, sincere and long lived. *Medho-prakriti*:—Complexion, eyes, hair, lips, nails, urine, fæces etc., are all unctuous. Persons of this group are wealthy, powerful, happy, liberal and sincere: *Asthi-Prakriti*—The bones, joints, teeth and other solid parts are thick and heavy. These people are possessed of great strength, energy, perseverance and power to endure any amount of pain and fatigue. *Majje Prakriti*—Limbs are soft and strong, complexion oily, voice harsh and the joints long and rounded. They are long lived, endowed with great strength, knowledge and offsprings, and commend the respect of everybody. *Sukra* or *Arthava Prakriti*—These persons are of amiable disposition and looks. Their eyes seem to be full of milk. They are very fond of the other sex and in turn are very much liked by them. Their teeth are oily, shining, strong, symmetrical, closely set and handsome. Their complexion and voice are soft and agreeable and the body is of great strength.

*Principles of Pharmacology*.—In Hindu medicine, the action of a substance used as a medicine is judged by taking into consideration six characters viz., (1) *Dravyam*—the preponderant *bhuta* of the *panchabhutas* forming the structure of the substance (2) *Rasam* refers to the *Shadrasas* already referred to (3) *Gunam* means the primary properties of a thing (4) *Veeryam* is the temperament or potency of a medicine (5) *Vipakam* has been explained along with *rasam* (6) *Prabhavam* is the special action of a drug that cannot be explained by its *dravya, rasa, guna, Veerya* and *Vipaka* characters. Now we shall study these six features in detail.

First comes the *Dravyam*—Those in which the *Parthiva bhuta* dominates i.e., substances of *Parthiva Dravyam* have the following characters. They are thick, pithy, compact, dull, heavy immobile, rough, strong, smelling and gross. They increase the firmness, strength, hardness and the rotundity of the body. Nutritive, emollient and purgative drugs are generally of this *dravyam*. *Apya Dravyam*. These are cold, moist, glossy, dull slowly digested, mobile, compact, soft, slimy, and sappy. They soothe and impart a glossy character to the body, keep it moist, favour the adhesion of the divided parts, promote the well-being of the tissues and increase the liquid contents of the body. These resemble the previous group in their pharamacological actions. *Tejasa Dravyam*—These are heat making, pungent, keen, rough, subtle, penetrating the minutest capillaries, dry, rough, light and non-slimy. They produce burning sensation, help digestion,

favour the bursting of any abscesses, increase the body temperature, strengthen the eye-sight, improve the complexion and impart a healthy glow to the body. Drugs of this group act as emetics, appetisers and expectorants.

*Vayavya Dravyam.* These are subtle, dry, rough, light cold, non-slimy and parchifying. They remove the slimy character of the body interior, produce lightness, dryness and emaciation of the body and increase the speculative and contemplative faculties of the mind. These act as emetics, astringents and expectorants.

*Akasa Dravyam.* Substances of this group are smooth, unctuous, soft, subtle, pliant, expansive, porous, and non-slimy. They produce softness, lightness and porosity of the body and act as sedatives in general.

The second character to be noted in judging the actions of medicines is the *rasa* or taste. The six fold nature of it—*Shadrasas* has been already explained. All substances in this universe have one or other of these *shadrasas*, singly or in combination of two, three, four, five and six. These total sixty-three in number. Secondary combinations and different degrees of the same rasa give to each substance, a specific taste that can be analysed only by a very careful scrutiny. However, each of the six primary tastes has its own properties and actions as follows :—

*Mathuram-Sweet*—This is cooling, unctuous, laxative, heavy, anti-*vatic* and anti-*pittam*. It produces in the mouth a sort of sliminess, increases the body *kapam* and breast milk enables the sensory organs to act well and preserves the life energy in general. From birth onwards this is liked by every being. It is nutritive, rejuvenating, good for the hair, complexion and voice and is useful in various exhausting diseases such as consumption, haemoptosis, chronic ulcers etc. If taken in excess, fat and kapam are increased. Indigestion, worms in the bowels, urinary disorders, cough, enlargement of glands in the body, etc., set in.

*Amlam-Sour.* This is hot, unctuous, laxative, light and anti-*vatic*. It produces in the mouth a sense of clearness and increases the saliva. Teeth chatter, hairs stand up and the eye brows and eyes are squeezed. Appetite and digestion increase. It is a tonic to the heart. Healing of wounds, recovery from any suppurative processes in the body, ill effects of poisons are all retarded from getting cured. In excess, body gets debilitated and a burning sensation is produced in the throat and chest. Diseases such as dropsy, eczema, anaemia and giddiness set in.

*Lavana-Saline.* This is hot, unctuous, laxative, heavy and anti-vatic. Increases the salivation and produces a burning sensation in



the mouth. It imparts a great relish for food, promotes the softness of the body, purifies all the body-ducts and produces contraction and dryness of all the organs. It is incompatible with other tastes. It is penetrative and helps the spontaneous bursting of swellings. In excess, emaciation, grey hairs, baldness, eczema, leprosy, loss of the body complexion, impotency, dropsy and such other diseases are produced.

*Katu-Pungent.* This is hot, dry, constipating, light and anti-kapa. It causes a burning and tingling sensation at the tip of the tongue, watering of the eyes nose and mouth and a burning sensation in the oral cavity. It is good for throat complaints, flatulence, excess fat in the body, fatigue and worms in the bowels. It clears and purifies all the body ducts. It reduces semen and breast milk. In excess, much thirst, emaciation, impotency, loss of strength, pain in the various parts of the body, dryness of the throat, palate and lips are produced.

*Tikta-Bitter.* This is cooling dry, constipating, light, anti-*vatic* and anti-*kapa*. It clears the mouth of its sliminess, paralyses the sensation of taste for other *rasas*, causes goose flesh on the skin and gives rise to a sort of sucking sensation in the throat. It increases the relish for food and is good for mental activities. Blood gets purified. Intestinal worms, effects of poisons, exudation of much fluids in the body, excess fat and giddiness etc., are all relieved. In excess, it causes the drying up of the *dhatus*, excess of *vata* and all the consequent diseases such as pain, paralysis, convulsions etc.

*Kashayam-astringent.* This is cooling, dry, constipating, heavy, anti-*pitta* and anti-*kapa*. It produces a sort of numbness in the tongue, blanching of the vessels in the throat and a sort of obstruction therein. It purifies the blood, lessens the various bodily secretions and is a sedative to the system. In excess, flatulence, aggravation of *vata*, diseases of the heart, impotency, and obstruction of srotas (ducts) are produced.

*Gunas* or the fundamental properties of drugs are twenty in number—ten primary and two their opposites. (1) *Guru and Lagu*—Heavy and light. This refers mainly to the digestibility of a substance as to whether it is heavy of digestion or easily assimilable. (2) *Seetham and Ushnam*—Cold and hot as noted by the primary impact a thing produces when put on the tongue. (3) *Snigdam and Ruksham*, oily and dry. By oily is meant the unctuosity or the greasy character of a substance while dryness means, more a state of non-oiliness than mere lack of moisture. (4) *Mandham and Thikshnam*, dull and keen. Some things produce a sort of dullness to the system e.g., buffalo's milk or curd while others like alcohol are very penetrative and rouses the body spirit. (5) *Mrithu and Katinam*, soft and

hard have reference to the consistency of a substance. (6) *Karam and Chlakshnam,* rough and smooth apply to the surface of an object. (7) *Sthiram and Saram,* immobile and mobile. This also refers to the volatility or the non-volatility of a substance. (8) *Sthulam and Sukshamam* gross and subtle. This means whether a thing is visible to the gross sense with a definite form as solids or invisible like Gas. (9) *Sandram and Dravam*—solid or liquid, *sandram* refers to semi-solid states too.

Regarding *Veeryam.* It is the temperament of a substance i.e., whether it is hot or cooling in its effects on the body. Hot effects mean the appearance of symptoms such as burning sensation in the body, Congestion of the eyes, increased pigmentation of the urine, restlessness, insomnia-exhaustion etc. The cooling action is inferred at first by a sense of well being and afterwards by dullness, lethargy, heaviness of the stomach, cold in the head etc. These two conditions hot and cold may be compared to the effects of acidity and alkalinity respectively in the blood.

About *Vipakam,* little need be said beyond what has already been noted. The importance of this phenomenon will be seen when the *Vipaka* action of a substance dominates the effects of *rasa* i.e., when apparently saline substances manifest the actions of sweet ones or bitter and astringent substances act like pungent things.

*Prabhavam* is the special action of a drug not warranted by its other five characters. Thus croton seeds and plumbago Zeylanica root bark have the same *dravya, rasa, guna, Veerya* and *Vipaka,* however the former is a drastic purgative while the latter is not.

Of the above six features of a drug *prabhavam* is the most domineering, Next in order come *Veeryam, Vipakam, rasam, gunam* and *Dravyam.* After having carefully noted these points about a medical substance, they are related to the activities of the three *doshas* and *sapta dhatus* and their uses in human ailments noted,

*(To be continued.)*

# VITAMINS.*

BY

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The known vitamins have not yet been isolated as separate chemical entities. Therefore, their composition is not known. But what has been really known, from observations in feeding experiments on animals is this: that the foods are "dead" without the presence of vitamins in them.

The vitamins are derived, directly from the vegetable kingdom. And indirectly they are derived from the products of animals, feeding on the vegetable kingdom. Since their composition is unknown, the vitamin values of food stuffs, have to be determined on a biological basis. These values are influenced by the quantity of food taken, and also by the treatment to which food stuffs are subjected before consumption. For instance, the vitamin value is reduced or destroyed by Desiccation, Heat, Alkalies, Storage, Oxilation or Decomposition.

From biological determinations certain definite facts have been established regarding the functions of vitamins. In spite of their presence in negligible amounts in food stuffs the physical well-being is mainly dependent on them. The required energy for the body metabolism is no doubt supplied by the proximate principles of food, that is Proteins, fats, Carbohydrates and salts. But these principles fail to be utilized by the tissue cells in the absence of vitamins. That is to say, the vitamins simply aid food metabolism. They are somewhat analogous to Catalytic agents in chemistry. So the two factors, that is the vitamins, and the proximate principles, (Proteins, fats carbohydrates and salts) are complemental to each other. For the proper discharge of this function of vitamins the perquisite is a well balanced Dietary (that is to say proper proportions of proteins, fats, carbohydrates and salts.

The status of vitamins in the scheme of human nutrition has been summed up by Robert McCarison in the following words——

"The vitamins are one link in a chain of essential substances for the maintenance and harmonious regulation of the chemical processes in the tissues. Their action must be considered with metabolism as a whole, that is a well balanced Dietary normal digestion and assimilation and normal endocrine function which are other links in the chain. If this link be broken, the harmony ceases, and there comes discord, as it may just as if any other link be broken.

* Read at a meeting of the Trichinopoly Dist. Medl. Assn, and sent specially for publication in the Antiseptic.

The vitamins are as the spark which ignites the fuel mixture of a petrol driven engine, liberating its energy. This spark is of no use without the fuel nor the fuel without the spark—nay, more, the efficacy of the spark is dependent in a great measure on the composition of the fuel mixture. The fuel is not utilised without the spark. If weak spark, or no spark, the fuel is largely wasted. Not only that—in the human body—the wasted fuel causes products harmful to the organism.

'In these circumstances, life may be sustained for a longer or a shorter period, during which the body utilizes, its reserve stores of vitamins and sacrifices the less important tissues to this end. But there is a limit beyond which such stores cannot be drawn upon and once this is reached, the cells of higher function such as secretory endocrines and nerve cells, begin to lack vigour and to depreciate in functional capacity, although the tissues may still hold considerable stores of vitamins. The disintegeration process is delayed or hastened; lessened in severity, in one direction or increased in severity in another according, as the proximate principles (proteins, fats, carbohydrates and salts) are well balanced or ill-balanced and according to the character of their lack of balance. The conception that the vitamins provide the cells of the body with the power or the will to work, thus this great merit—that it furnishes a working hypothesis on which to frame our treatment!"

## VITAMIN A.

Raw milk, animal fat, egg yolk.

*Sources.* Green leaves and shoots of plants spinach, lettuce, alfalfa, cabbage, brussels, sprouts; germinated pulses or cereals (in lesser amount.)

*Note*:- Its existance runs parallel to lipochromes in distribution, that is to say it is associated with yellow pigment as in Ovaries, eggs and milk. In liver, all the vitamins are in high content. It has been also demonstrated to be stored in foetal liver.

The vitamin content of raw milk depends entirely on green fodder. Only whole raw milk contains it, that is to say its presence is destroyed by skimming, heating, boiling, pasteurization, tinning or canning, drying (as in proprietory foods) curdling, or being subjected to any other treatment before consumption.

It exists in butter and codliver oil and it is remarkable to note its value in unrefined codliver oil which is 250 times as rich as in refined codliver oil or butter, bulk for bulk. Refining of course oxidises and destroys it. It is practically absent in all fruits except



in Banana, Orange, Papaya, and Mango all of which contain it in small amount.

Tomatoes are very rich in it as rich as liver. In tomatoes all the three vitamins are in high content as in liver.

It is absent in vegetable oils (except in cocoanut oil) margarine roots and tubers, vegetable seeds (except soyabean, linseed, maize and millet) white flour, polished rice, cane sugar, Cocogem and proprietory foods.

Properties:—

1. *Solubility.* It is soluble in ether, alcohol and benzene. It is highly soluable in carbon di-sulphide and chloroform.

2. *Light and Air.* It is easily oxidized by light and air and hence destroyed.

3. *Heat.* It is destroyed at 100 degrees, if kept for four hours. This is due to oxidation. Autoclaving vegetables for three hours at 15 lbs. pressure does not destroy it and so it is comparatively resistant to heat in vegetables.

4. *Alkalies.* It is resistant to alkalies, and is not saponified. Thus it differs from true fats.

5. *Oxidation.* It is always destroyed by oxidation as by ozone in ultraviolet rays or by hydrogenation of fats as in refining and hardening.

6. *Freezing*: does not destroy it.

*Biological determinations.* It is associated with fat metabolism. By this association, the body is able to store its vitamins in reserve in certain organs.

Whenever the vitamin A deficiency in food occurs, this reserve is utilized by the body. This vitamin is called the 'Anti-infective vitamin'. Its anti-infective action is exercised simply by maintaining the integrity of ephithelial lining membranes in the various parts of the body such as the respiratory, urinary and reproductive lining membranes, the conjunctiva or the ear and the ducts of organs. Whenever a breach occurs in these lining membranes infection and inflammation naturally follow. So clinically we get such conditions as Adenoids, Sinusitis, Otitis-media, Gastro-duodenal Ulcer, Gynaecological Ailments, Goitre, Urinary Calculus, Exophthalmia etc.

On the basis of the forgoing exposition, the etiology of sprue may be easily understood.

It is now more or less definitely established that Pernicious Anemia and Pregnancy Anemias and night blindness are associated with vitamin A deficiency in food.

## VITAMIN B.

*Sources* :—Seed germs, bran of wheat and rice, peas, beans, nuts egg, yeast and glandular organs (Liver and Kidney). It is present in lesser amounts in certain fruits and vegetables.

*Note* :—In the pulses, it is present throughout the seeds. In the cereals, it is present only in the germ or embryo and the husk. Hence germinated pulses are rich in it.

Nuts, such as ground nut, almond, or soya beans, are doubly valuable for both their protein value and vitamin B value.

Yeast is specially valuable for its vitamin B content, its protein value, and its stomachic property. Marmite is a convenient form of exhibiting yeast.

In small amounts, it is present in fruits as Banana, Orange, Lemon, Grape, Apple, Pear, Prunes, and Tomatoes.

In vegetables also it is present in small amounts as in Potatoes Cabbage, Lettuce, and Spinach.

It is *absent* in Polished Rice, White flour, Sago, Tapioca, Tea and Coffee, Butter and Codliver oil,

*Note* :—The vitamin B value of a food stuff runs parallel to its phosphorus content, and the latter in turn to that of the soil on which it is grown.

Properties :—

1. *Solubility* :—It is soluble in water and alcohol, but not in ether or other fat solvents. Its water solubility shows the importance of preserving the water in which food is boiled.

2. *Heat* :—It is comparatively resistant to heat. It is slowly destroyed at 100 degrees and more quickly at higher temperatures. So, it is practically unaffected in ordinary cooking.

3. *Alkalies* :—It is totally destroyed by alkalies (as in boiling with sodium carbonate in westerners method of cooking). Cooking in acid medium as in Tamarind tends to preserve it.

*Biological Determinations* :—Two factors have been isolated in this vitamin namely.

(1) Growth. Promoting water soluble factor —which is associated with gastro-intestinal symptoms and endocrine disturbance.

(2) Anitineuritic factor—which is associated with the production of Polinuritis whenever the deficiency occurs.

This Vitamin is closely connected with carbohydrate metabolism, Fat metabolism and habitual abortion. It is remarkable to note that this vitamin is not stored by the body as vitamin A. It is utilised then and there, and so the body has to be supplied with it daily in the food.



In vitamin B deficiency, it has been found that gastro-intestinal disorders are more lasting and more refractory to treatment than the damage to the nervous system. This is a fact of much practical and clinical importance.

## VITAMIN C.

*Sources* :—Fresh green vegetables.
Fruits.
Germinating seeds.

*Note* :—It is interesting to note the relative vitamin values of the following :—

| | | |
|---|---|---|
| Lemon | 100 | Grapes have only 1/10 vitamin value as compared with Orange in all these vitamins. |
| Lime | 100 | |
| Onion | 100 | |
| Cabbage | 100 | |
| Tomatoes | 100 | |
| Tamarind | 7·5 | |
| Grapes | 5 | |

It is *absent* in roots and tubers, milk, animal and vegetable fats, tinned meat, cereals and pulses and in yeast.

Properties :—

1. *Solubility* :—It is soluble in water and alcohol.

2. *Heat* :—It is comparatively resistant to quick heat at 100° degrees centigrade. It is more rapidly destroyed by prolonged heat even at lower temperatures.

3. *Alkalis* :—It is destroyed by alkalies.

*Biological determinations* :—It has been found that gastric acidity is not increased by oranges and citrous fruits, as is commonly supposed.

This vitamin tends to resist the onset of dental caries and pyorrhoea alveolaris.

Its deficiency in food is associated with scurvy, vesical irritability and enuresis of childhood.

## VITAMIN D.

*Sources* :—Animal Fats (Butter and Codliver oil)
Mutton and Liver.
Egg.
Yeast (by some observers)

*Biological determinations* :—Its action is by maintaining the calcium phosphorus ratio in the blood. It is the only vitamin

that causes Hyper vitaminosis in over dosage. Infants are over susceptible to excess of this vitamin, Irradiated ErgoSterol is no substitute for codliver oil.

Vitamin D deficiency in food causes a chain of events as follows :—

1. Insufficient " netabsorption " of Calcium and phosphorus by the body.
2. Hypo Calcemia and/or Hypo-phosphatsemia of the blood.
3. Inadequate Calcification of bones in young or De-mineralisation of bones in adult.

This sequence of events is reversed in Vitamin D excess intake into the body.

1. Increase " net absorption " of calcium and phosphorus by the body.
2. Hyper-calsemia and/or Hyper-phosphatsemia of the blood.
3. Metastatic deposition of calcium in soft tissues, chiefly kidneys and aorta.
4. Increased excretion of Calcium/phosphorus through the urine and fæces.

*Comparison of Vitamin D action with parathyroid action* :—It is contended by some workers that the actions of the two are independent of each other.

The main point of difference is that vitamin D aids utilisation of food-calcium or phosphorus, whereas parathyroid hormone raises blood calcium (Hyper Calsemia) soley by withdrwal of calcium from bone. Thus, the "net absorption " of Calcium phosphorus is not affected by parathyroid hormone. On the other hand, there is loss of Calcium to the body owing to urinary excretion.

## VITAMIN E.

*Sources* :—Wheat germ, lettuce, peas, Alfalfa, and less in egg yolk.

Properties :—

*Solubility* :—It is soluble in fats.

*Heat* :—It is not destroyed by heat at 100 degrees centigrade.

*Biological Determinations* :—It is associated with sterility and productivity.

## VITAMIN F & G.

Its deficiency is associated with Pellagra. There has not been much investigation carried out on these vitamins.

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*'Health' Photo Competition No. 2*

# 'HEALTHY MOTHER & CHILD'.

## Photo Contest.

The proprietors of Health request readers of the Journal to submit photos of their healthy child and its healthy mother for the above photo competition.

This is the 2nd competition of this kind the first having been conducted in March '30. The subject was then 'healthy child within 5 years'. The present subject is "healthy mother and child" as aforesaid.

Prizes of Rs. 25, 15, and 10 with consolation prizes if necessary will be awarded to those whose photos have been adjudged as best. The competition is open to all Indians resident in India, Burma or Ceylon or Indians abroad. In the photo which may be a snap-shot or studio portrait, the child should be with the mother. No age limit is fixed to the mother but to the child it must be above 1 and below 4 years, on the date photographed. Photos should have been taken in 1932 only. Badly taken photos even of healthy mother and child will not win a prize. All photos should be good enough for reproduction and should be addressed to The Editor, 'Health' 323, Thambu Chetty Street, Madras, so as to reach them on or before 15th November '32 with a declaration given in the coupon given in the current issue of Health, English and vernaculars. Any number of photos may be submitted provided each one is accompanied by the aforesaid coupon pasted on its back.

The proprietors will have the photos, judged by competent authorities whose decision will be final. The winners' names will be published in January '33 Health. It is understood that the proprietors of Health have the right to publish the photos submitted, if they so desire.

**As an inducement to Photographers Rs. 10/- will be paid for each photo published.**

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**HEALTH,**

**An Illustrated Monthly Journal devoted to Healthful Living**

**Estd. 1923.**

EDITED BY

**Drs. U. RAMA RAU. & U. KRISHNA RAU, M.B.B.S.,**

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# THE ADVANTAGES AND DISADVANTAGES OF LOCAL AND REGIONAL ANAESTHESIA.

BY

M. ABDULLA, L.M. & S. (Dn.,) L.C.P. & S. (Bom).

*Medical Officer, Municipal Hospital, Vaniyambadi, N. Arcot.*

A patient who is to undergo a surgical operation is afraid not of the surgeon, nor the operation but of the general narcosis, commonly known as "Chloroform". He knows that he should undergo a period of cessation of his consciousness, briefly though it may be, and that during the time his life is entirely in the hands of one or two men, who may perhaps cause his death due to their carelessness. He doubts if he would open his eyes again to see the world. Consequently many of our patients do not, as a rule subject themselves to operations in the early period of the disease. Excruciating pain and very great discomfort are the main factors that drive one to desperation. Generally before the surgeon gets his chance, the patient has already seen a number of physicians and Hakims and has undergone all sorts of dietic restrictions which only tend to lower the vitality to a geat extent. By the time the patient decides to undergo an operation, the disease would have progressed enormously. Having lost all his energy and his general power of resistance, he becomes what we call a "Poor Risk" for an operation.

How many of our patients, do we not know, whose health could be improved, whose lives could be made more enjoyable, and whose sufferings could be alleviated by a surgical operation!

I most sincerely think and am sure that many patients of this group consent to undergo an operation most willingly when we make clear to them coolly and sensibly, the advantages of Local and Regional Anaesthesia. We must convince them that they will not lose their consciousness all the time the operation is done and that the operation will be painless even to the slightest extent. They are more convinced if they are shown a few cases, operated under local anaesthesia. You will be surprised to find that in a short time, they would go over to you begging for an operation. This has been my humble experience and I have almost always been successful in adopting this procedure.

A doctor in-charge of a mofussil hospital or a dispensary should be all in all. He should be a good physician, an expert surgeon, eye specialist, accoucher, a dentist, a health officer, and a coroner also.

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* Specially contributed to the "Antiseptic".

Unless one has all these qualifications, he has less chance to become popular and be called a "good doctor". Unlike the metropolitan medical institutions, these hospital are very poorly equipped and are badly maintained. The assistance given in these institutions are one or two compounders and one or two ward-boys-may be old idiots. There are no trained anaesthetists to give chloroform and aether and no doctors to assist him in his operations and no nurses to sterilise surgical instruments and neccessary clothings and none to look after the patients after the operation, except the ignorant relatives of the patients. It is under such adverse circumstances that a doctor has to do his duty. During operations in these institutions, the compounder is made to give chloroform to all the surgical patients. Some of these compounders are good anaesthetists, but the majority of them are a set of ignorants. Deaths occurring in these hospitals and dispensaries, due to anaesthesia, are not brought to light, lest the superior officers should take the doctor incharge, to task.

During the course of an operation in these hospitals, under general narcosis, the attention of the surgeon is diverted towards many other things that collectively make the operation a success. He cannot concentrate on one thing alone. He is afraid of the chloroform which is in the hands of a compounder. Every now and then he sees his patient, carefully watches his respirations and often looks at his pupils, instructs his chloroformist either to increase or decrease the dose of chloroform and if things are not done as he wishes he comes down upon the poor compounder with a volley of abuse and curse. If anything is found to have gone wrong with the pulse or the respiration of the patient, the poor surgeon gets off his head and it is not very uncommon.

All the above troubles and worries could be easily avoided by sensibly applying Local and Regional Anaesthesia to all your surgical patients. It has great many and decided advantages of cardinal importance that none can deny. These are :—

1. Low mortality.
2. Less of surgical shock.
3. No post-operative dangers of vomiting and nausea.
4. Very little or no post-operative troubles.
5. No special apparatus needed.
6. No specially trained assistants and anaesthetists are required.
7. No special dangers on the operation table.
8. Less cost.
9. Better results.

Let us consider each point seperately.



*Mortality.*—To arrive at a definite conclusion in determining the death rate in general narcosis and analgesia, is very difficult, for we have to consider several factors that are mainly responsible for the deaths of the patients. There is no uniform system of recording anaesthesia. The anaesthesia may prove fatal (1) as a result of over dose (2) or because a faulty method has been applied (3) or a bad choice of anaesthesia has been made (4) or the drug might have been impure. Apart from these, the condition of the patient also should be considered. Shock, pre-existent diseases, accidental intercurrent complications, unavoidable post operative troubles, may bring about death, though the anaesthesia has been rightly given and properly selected. Such deaths are commonly grouped as "fatalities due to anaesthesia." Wide experience and a sound judgment of the anaesthetist is also a prime factor in determining the risk under anaesthesia. In Local and Regional Anaesthesia the death rate has been very little and practically none, as pointed out by Dr. Gwathmey who collected 278945 cases from 99 hospitals with the following results in civilian practice (1905—11).

| Form of anaesthesia. | | Cases. | Deaths. | Mortality |
|---|---|---|---|---|
| **Local analgesia** | ... | 14,878 | ... | ... |
| **Nitrous oxide and Oxygen** | ... | 8,585 | ... | ... |
| **Spinal anaesthesia** | ... | 521 | ... | ... |
| **Chloroform and aether** | ... | 16,054 | 2 | 1-8027 |
| Nitrous Oxide and Aether | ... | 41,435 | 6 | 1-6905 |
| **Aether** | ... | 1,57,453 | 28 | 1-5623 |
| **Chloroform** | ... | 15.390 | 8 | 1-2048 |

*Shock.*—It is an admitted fact that there is very little shock to a patient operated upon under local and regional anaesthesia, very much less than in general narcosis. "Fear-Shock" is a great danger to a patient. Therefore, it becomes very neccessary on our part to get the good co-operation of the patient operated under local anaesthesia. The high-strung patient, the neurasthenic and the neuropath, is in some danger during anaesthesia. A judicious use of some sedative or a combination of two or more of them should neccessarily be given in such cases, in order to quiet the mental anxiety and obviate the deadly fear of the patient. This can be brought about by administering a hypodermic injection of a solution containing Scopolomine Gr. 1/100, Morphine Gr. 1/6 to 1/4, and Atropine Gr. 1/100. This preliminary step of injection should be taken one hour before anæsthesia is administered. Scopolomine acts concurrently with Morphia in producing suspension of conciousness. Atropine stimulates the respiratory centre which is depressed by Morphia.

The reflex action of trauma and the subconscious mental sufferings of the patient, during an operation, are transmitted to the higher nerve centres, provoking changes and alterations, which, when repeated, act deterimentally on neurons and these disturbances constitute shock. Local and Regional anaesthesia excludes all these changes, for they produce a complete physiological section of the nerves and thereby suppress all impulses from the field of operation. The results on the whole, are that there is less chance of getting shock and more chance of early recovery to the patient.

*Post-Operative Dangers.*—Pulmonary complications, persistent vomitings, cardiac failure and shock are the common post-operative dangers in general narcosis. More rare and unnoticed are the degeneration of the cells of kidneys and liver. The nausea and vomitings which continue for quite a considerable time, after the operation, are the prominent factors that reduce the vital forces, which perhaps being already at the lowest ebb, may bring about a fatal issue. These dangers are avoided and are eliminated in Local and Regional anaesthesia.

*Lungs*:—Administration of chloroform and ether is attended with respiratory disturbances. These are partly due to the continous lying postures after the operation is done and mostly to the accumulation of mucous in the bronchi and partly due to the inhalation of septic materials during anaesthesia. But a large majority of pulmonary complications which follow surgical operations are embolic and are less common after Local anæsthesia than after general.

Operations on the respiratory tract in Regional anæthesia are greatly simplified and facilitated. The patient who is all conscious, is allowed to assume any position that he finds convenient. He can arrest his breathing, suppress a cough, expectorate if necessary and in brief do whatever he and the surgeons want.

*Special Instruments*:—Elaborate and expensive instruments and apparatuses that are devised and made every year, for the special purpose of giving general anaesthesia, are not at all necessary in Local and Regional Anæsthesia. A good syringe with a few good and sharp needles of various sizes and lengths are all that are needed.

*Cost*:—Cost is of prime importance in these days of financial stringency. A few grains of Novocain or any of its preparation and a few drops of Adrenalin solution are all that are required and these cost much less than one or two bottles of refined Chloroform and ether, which are specially prepared for inhalation.

The disadvantages of Regional anaesthesia are very few and should not be considered as such.

*Special Training.*—It is true that some training is required for the successful application of Local and Regional anaesthesia. This, however, is not more than what is required in successfully administering Chloroform and ether. Training is required in every branch of our science. The more the training we get, the better the results produced. The training that is required in applying local anaesthesia can easily be got on skeleton and cadaver and when one has gained sufficient knowledge and becomes familiar with the depths and directions of the various punctures, he may try on living subjects, as no harm results in injecting a weak and aseptic solution of novocain and adrenalin.



*Necessity of gentleness and skill in operative technique.*—In surgery, one who does his operation neatly and gently, is supposed to be a great surgeon and these are his qualifications. Pulling, tearing, and rough handling of tissues should be strictly avoided when operating under local anaesthesia. Scalpel and scissors should be more frequently used for all the separations and dissections for any forcible pull on any viscera would give pain.

It has been my experience that about 85% of the patients operated under Regional anaesthesia were so insensible to pain, as to admit of all manipulations. The remaining few that complained of a little pain were, almost all of them heavy drunkards and some neurasthenics. Some, of this group, started complaining of slight pain even from the beginning of the first puncture and continued it even when no operation was performed. In such cases it is highly advisible to give the scopolimine and morphia injection and blindfold eyes and plug their ears immediately before the operation. A few encouraging words do a lot of good to the patient. It is my practice to leave an assistant to engage the patient in talking, thus distracting his attention from the operation.

In cases of abdominal surgery, more specially in gastric and intestinal, I have noticed, that a pull with a moderate force, as in trying to bring the appendix outside the abdomen, gives some sensation which is often described as a sinking sensation in the epigastrium. This sinking sensation should not be mistaken for actual pain. If desirable a few whiffs of general anaesthesia during this stage, may be given in order to quiet the patient, as the mental attitude of the patient has às much to do as the operative skill of the surgeon.

The skilful surgeon, who is always good in regional anaesthesia, can conveniently do many of the common operations. He can remove Appendix, resect stomach and any part of the intestines, can do gastro-jejunostomy, resect one or more pieces of ribs, excise tumours and cysts and perform amputations of all kinds. In performing operations in fixed localities, and more specially in Gynæcological cases the surgeon is quite independent of the use of

general anaesthesia and in the mofussil hospitals of the kinds that I mentioned above, he can make the best use of his compounders by taking them as his " Assistant-Surgeons ".

I do not of course feel that a day would come when Regional anaesthesia would completely displace the general anaesthesia in all the operations, but I do hope that all the medical officers that are in-charge of the mofussil hospitals and dispensaries would take up to regional anaesthesia to do their best, in all emergent cases, to alleviate the human sufferings, at least of those poor patients who are not rich enough to meet even the railway expenses to attend the better equipped and metropolitan hospitals.

# Cases & Comments.

## QUININE IRRIGATION IN DYSENTERY.

BY

D. R. VAIDYA, L.C.P.S., (BOM.)

*Medical Officer, Waghai Dispensary, Surat Dt.*

There is nothing unusual in the case I produce below which I came across except that it proves the efficacy of two newly invented preparations " Anabin" of Bengal Chemical, (Kurchi Bismuth Iodide) and ' Atebrin" of Bayer Meister Lucius.

On the morning of 14th June a Forest Officer, A. P. aged 34, came to me in a collpsed condition with a complaint of passing frequent stools with blood and mucus and severe griping in abdomen. On his arrival his condition was :—

Expression :—Pinched Haggard. Tongue :—Heavily furred and anæmic.

Stools about twenty a day with blood and mucus. Abdomen tender all over more so over Cæacum and ascending colon. Tenesmus and tormina were marked.

Pulse 52 p.m. feeble. He was very weak and could not sit up in bed without assistance. Whenever the spasm of griping got severe he was becoming almost unconscious with cramps in hands and feet. Suffice to say his condition was serious.

*History* :—In 1930 the patient was operated for Chronic Appendicitis with success. He was all healthy after the operation. In March 1931, he developed symptoms of Gastric ulcer for which he was treated medicinally and dietetically and he materially improved. The trouble restarted in Feb. 1932 when rigorous dietetic treatmen t



was enforced with routine treatment. He being on a prolonged dietetic treatment, coupled with his arduous duties, his vitality was reduced considerably. The attack of Dysentery in my opinion is due to, as facts confirm, drinking of stagnant and unhealthy water from Nala beds as his duties compelled him to camp in forest. On or about the 15th May he got 5 to 7 motions with little griping and on 22nd May condition getting bad, he placed himself under medical treatment and was then diagnosed by the Doctors as acute "Amoebic Dysenstery". Emetine was administered intramuscularly for six consecutive days in 1 gr. dose then. He having recovered partially, resumed his duties camping in forest and drinking the same water. He was at this stage given " Anabin", 2 pills a day. On 2nd June he had a relapse which was controlled by " Anabin and Agarol" taken by himself. He was given three more injections of emetine from 9th onwards. On the 13th when he was on his duty inspecting forests, he got severe attack and collapsed. The attack took a very serious turn so he was brought to me in a cart.

*On examination*:—Face pinched and haggard. Tongue heavily furred and anæmic.

Motions about twenty with blood and mucus. Tenesmus and tormina marked. Abdomen tender all over.

Heart-feeble but regular. Pulse 52 p.m. volume fair but the pulse was feeble.

***Treatment*** :—He was put on castor oil and opium for a day. I attributed the slow rate of the heart and run down state to the toxic dose of emetine. Knowing well the adverse effect of emetine, he was placed on Kurchi Bismuth Iodide " ***Anabin***" 4 tablets a day. To sustain his heart, he was given Digalen 4a Roeche & Co., Liq., Adrenalin twice a day, Irrigation was refused by the patient. The condition showed no improvement. Microscopical examination was not possible ; hence I had to content myself by testing the reaction of the stools which was faintly acid.

On 17th irrigation was thought indispensable for the local treatment. The patient was prevailed upon to be treated accordingly. 1 pint of Quinine sulph. solution 1 in 1000 with 15 ms. of opium was injected by low enema (Osler.) The enema was followed by very severe griping.

On 18th morning patient showed slight improvement, motions dropping down to 8 to 10. Injection was repeated with an addition of Iodine (Sol. of Quinine in 750). The griping was more severe. The condition was steadily improving.

On 19th evening after the irrigation, the patient complained of griping and two hours later he got shivering and burning of the eyes with pain all over the body which he interpreted as a sign of fever. Pulse became rapid but no rise of temperature was noticed. The

lack of temperature, I attribute to his run down state. This being a malarious tract, 12 grs. of Quinine was administered.

On 20th he again got fever and complained of giddiness. The bulk of the medicine proved obnoxious and Bayer's new preparation "*Atebrin*" was given a trial.

On 22nd he had no fever and "Atebrin" was continued. Stools also considerably improved having only a trace of mucus in it.

On 23rd his motions were without any trace of blood or mucus. His condition had steadily improved during these days. He was very anæmic.

On 24th, he was given Haemogen of Bengal Immunity. Anabin is still being continued. He is much better by now.

The striking feature in the treatment is the griping after irrigation. It was in my opinion due to three factors viz. 1. The enema cleaned away the covering slough over the ulcers and the raw surfaces of the bowel came in apposition there by irritating the nerve endings. 2. The drug itself irritated the ulcers. 3. The distension and the peristalsis caused by it also contributed to it.

The improvement took place after irrigation there by proving its usefulness.

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## AMBLYOPIA.

BY

R. S. AGRAWAL, L.S.M.F.

*Ram Eye Charitable Hospital, Bulandshahr.*

Brijmohan was ten years old when he first came to me with his uncle who is a friend of mine. At the age of eight years it was noticed by the boy himself while playing the game of "hide and seek" that he was blind with his left eye. Although he was immediately taken to eye-specialists of various places he could not be cured and the case was left as hopeless. I had also examined the case but could not treat him. Simply the glasses were prescribed for him.

In May 1931, e. g. two years after the first visit I called the boy again to try this new treatment. With the test card the vision of his right eye was 10/200 but left eye had only light perception. This is a copy of his prescription for glasses which he had worn during these two years' interval:

Right eye – 1·0
Left eye + 1·0

I examined him with the ophthalmoscope and found the eye in normal state. The trouble was simply amblyopia. While the examination was in progress Brijoo's uncle was sorry because he was told by



the doctors that Birjoo would always have to wear glasses to save the right eye; that nothing more could be done for the left eye. What a shock it was to the family. Birjoo is a beautiful, obedient, and intelligent student of D. A. V. High School, Bulandshahr. His grand father loves him much. After the examination was over, his uncle exclaimed breathlessly:

"Is not there any hope at all, Doctor, Please? Oh, say there is".

I did not promise him anything. I always study each case that comes to me and help as much as I can. I said to the boy:

"If I had a bad eye and a good eye, I would not make my good eye do all the work. I would make the bad eye work hard so that I could see better,"

This interested the boy and he shouted, "Make my bad eye do some work; I will follow your directions."

I explained the method of Palming. By palming means to close the eyes and cover them with palms of the hands and shut out all light; then think of something that has been seen perfectly, or clearly, something pleasant such as flower or a white cloud in a blue sky, and let the mind drift from one thought to another. Boys like to remember a ball while palming. Little girls like to think of their dollies. Mothers like to remember the colour of their babies' eyes. When Palming is done correctly it relaxes the mind and body, and relieves eyestrain.

When I asked Brijmohan what he remembered while Palming, he said, "I can remember very well the black beard of my teacher." At once a roar of laughter came out from all were present at that time.

After palming five minutes with the left eye he became able to see the big letter of the chart, but as soon as the letter began to became dim, he closed and coverd his eyes. By repetition he could see the big letter at one foot distance on that day and left the hospital with a smile. It was a matter of great joy for me also, because the rays of success began to come out in a hopeless case. I was quite proud to have accomplished so much in one treatment.

Two days later the boy came again and with him came his uncle, eager to hear more of the miracle that happened to Birjoo. The same practice was continued. The vision jumped from 1/200 to 2/200 in left eye and 10/200 to 18/20 in right eye.

On May 13th, the fifth day Birjoo came with his grandfather who was anxious about him. I encouraged him to palm again. His grandfather stood by the side of his grandson and beamed with happiness as he saw his little boy's sight improve. He was thankful to see the rapid progress in Birjoo's sight. This day after an hour's practice there was wonderful change in his sight. The vision was

20/200 in left eye and 20/20 in right eye. Both went away smiling and talking together.

The sixth was the last day of Birjoo's visit. He was anxious to go home. He promised to practise faithfully and regularly there. After practising for some time I allowed him to go home. This day his vision became 20/60 in left eye and 20/20 in right eye.

After a fortnight I had a chance to see him again. He was neatly dressed. He smiled when he saw me and ran to his father and said to him, "Doctor Saheb is coming." His father showed much respect and was very much grateful. I examined Birjoo. His sight was gradually improving towards normal, but, occasionally he stared to make the letters look clearer. I directed him not to stare at all and blink after every second or two.

As the school was going to reopen after the summer vacation, Birjoo returned in the first week of July. His smile was with him all the time and his gratitude to me was unbounded.

Birjoo does not come for treatment any longer.

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## A CASE OF CEREBRO-SPINAL FEVER

BY

RATILAL K. MODI, L.M.P.,

*Assistant Medical Officer, State Hospital, Jaora State, C. I.*

A Hindu male boy aged 10 years came to hospital at 8 p. m. on the 7th April, 1932, with high fever and severe headache.

On admission to the hospital his temperature was 102·6°, Pulse 104 per minute. Patient was in semi-conscious condition; head retracted with stiff neck. Bowels highly constipated.

*Previous History.*—Having suffered from fever for two days—bowels not moved, had vomited twice, and looking to the symptoms I suspected this to be a case of cerebro-spinal fever.

*Treatment.*—A soap water enema was given immediately and a powder containing calomel gr. iv and sodii bicarb gr. 5 was given on the same night.

Next morning on the 8th April patient was in the same condition as he was on the previous night, temperature 102·2°, lying on one side in semi conscious state with stiff neck, head retracted and eyes partially closed. On rousing he could hardly answer the call, rather preferred to lie down quietly and showed disinclination towards disturbances, probably due to severe head-ache. As the head-ache was violent and the patient was very restless, I first made up my mind to let out some of the cerebro-spinal fluid which is greatly increased in this fever, with a view to lessen the intraventricular pressure in the brain and thereby diminishing the headache which was so much



agonising the patient that he could not raise up his head, as well as to have some toxins and meningococcii out, circulating in the fluid. I did the Lumber Puncture with an ordinary Lumber Puncture needle at its usual site i.e., between the 3rd and 4th intervertabral space in Lumber Region with all the antiseptic precautions possible, under CH $Cl_3$ anaesthesia. On the first puncture I managed to draw about 1 oz of cerebro spinal fluid from the spinal canal which came out in drops. When the drops of C. S. fluid stopped dribbling, I sealed the puncture by applying Tinct. Iodine and Tinct. Benzoin Co. on a small piece of cotton wool. As I had no antimeningococal serum on hand I injected intravenously 8 grains of urotropine (Schering). A sterilized solution in 10 c.c. of bidistilled water was prepared. Ice bag to the head and neck applied and milk diet was ordered. In the evening patient's condition was just the same temperature 102·6°. No relief in head ache. A powder of Pyramidon gr. 4 was given for fever and headache and two powders of urotropine gr. 5 each were given by mouth in the night at 4 hours' interval.

On the morning of the 9th April, patient's temperature was 103° bowels not moved, so an enema was given, headache severe. I again performed the lumber puncture under CH $Cl_3$ and this time I drew out about 2 oz. of C. S. Fluid which came out by dribbling without any hindrance, and 10 grains of urotropine injected intravenously: this morning's withdrawal of C. S. Fluid greatly ameliorated the patient's condition. Temperature which was varying from 102 to 103 for the last 2 days came to 101 in the evening and headache was less. Two powders of urotropine gr. v each were given by the mouth in the night at 4 hours' interval.

On the 10th morning the patient's temperature was 100·2, head ache very slight, had slept for about two hours, this was the first time that he slept since he fell ill.

Third time the Lumber puncture was performed not with a view to lessen the intraventricular pressure of the C. S. Fluid, as there was very little head-ache, but to have the remaining of the toxins and meningococii out circulating in C. S. Fluid. This time 4 drachms of Fluid dribbled out, then 10 grains of urotropine injected intravenously.

In the evening the patient's temperature was 98·4, no head-ache—stiffening of the neck disappeared and he was sitting up in his bed. Two powders of urotropine grains 5 each repeated in night as usual; since then patient kept up normal temperature. No headache and the made an uneventful recovery. Two more intravenous injections of 10 grains of urotropine were given afterwards to ensure complete safety against the disease and was discharged from the hospital on the 14th April, 1932.

My objeet in writing this article is to request my professional brithren to try intravenous injections of Urotropine in conjunction with repeated lumber punctures, whenever they came across such cases and if proved successful to publish their reports through this paper in order that others may take advantage of their practical experience. Again with this trifling drug which is stocked practically in every dispensary they would be able to save the lives of many patients who become the prey of this dreadful disease every year and die, simply for want of costly treatment, as many of the branch and village

dispensaries are generally not provided with antimeningococal serum, being very costly. Also the poor patients cannot afford to purchase it, or the serum cannot be had in time.

## A CASE OF HYSTERIA.

BY

BEMAL RANJAN DEY, L. M. P.,

*Assam Medical Service (Junior), Narsingpur (Cachar).*

A Mahommedan girl of about 20, was brought to my dispensary for the treatment of digestive disorders. She gave the following history.

For the last six months she was suffering from occasional pain in the gastric region which was aggravated by food, nausea, occasional vomiting, hyperacidity (she was not very sure of this); appetite said to be good.

On examination she was found moderately well built person.

| | | |
|---|---|---|
| Gum and teeth | ... | clean. |
| Pyorrhoea | ... | nil. |
| Tongue | ... | coated. |
| Stomatitis | ... | absent. |
| (this was very prevalent here at that time) | | |
| Anæmia | ... | slight. |
| Heart | ... | nothing abnormal. |
| Lungs | ... | nothing abnormal. |
| Liver and spleen | ... | not palpable. |
| Abdominal wall | ... | no tender spot but complained of pain almost every where when pressure was given. |

She has got two children, both healthy. Parents living and in good health. Veneral diseases, denied. No uterine troubles except she missed periods occasionally. Sleep always disturbed and the father of the girl complained that the girl has become eccentric.

A provisional diagnosis of gastric ulcer (early stage) was made but as I was myself not very sure about it, I wanted to attribute the causes as due to Roundworms. She was then treated with Santonine and Calomel and Saline Purge but the result was not satisfactory.

Then she was given Bismuth Carb, Sodii Bicrab, Mag. Carb Tr. Belladona, Tr. Hyoscyamis etc. without the slightest benefit.

I was then puzzled and thought that these may be due to anæmic condition of the girl but fortunately the father of the girl came to me after all treatment was stopped for a week and informed me that the girl had several fits during the last two days. The descriptions he gave me brought me to the conclusion that the fits were hysteric and she was treated with Pot. Bromide. Tr. Valerian Ammoniata and Tr. Asafœtida and Saline purge once a week. This line of treatment was continued for a month or so and she became perfectly free of all the above nentioned symptoms. She had no more fits for the last four months and enjoying a good health.

## GASTRIC FABLES...

# The Tale of One Small Boy and Two Dishes

A famed psychological laboratory invites us to take one small boy and place before him two dishes, one filled with spinach and the other with cakes such as grandmother used to make. Leave the room and try to guess which of the dishes will be empty when you return. Will the boy reach for a sweet or a vitamin ?

Thereby hangs the tale. Sweet desserts increase the secretion of gastric juice. If Johnny had taken his spinach, the cakes would have helped him to digest it. But he kept his taste in mind and forgot his stomach, until he was forcefully reminded of the error of his ways. Until ripened experience can point the way to him CAL-BIS-MA will have to stand by and relieve him of his stomach-ache caused by an excess of acid. A teaspoonful in half a glass of water, and he'll be ready for another try. You simply can't keep a brave boy down.

Cal-Bis-Ma is a combination of calcium and magnesium carbonates, sodium bicarbonate, bismuth and colloidal kaolin, blended into a palatable powder. It neutralizes excess gastric acidity quickly, efficiently and with lasting effect.... We will gladly explain the therapeutic merits of Cal-Bis-Ma and send a professional trial package for the asking.... Send for it.

## *In gastric hyperacidity* . . CAL-BIS-MA

*Prepared by* WILLIAM R. WARNER & CO., INC., *Manufacturing Pharmacists Since 1856.*
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# The Antiseptic

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## SURGERY OF THE SYMPATHETIC NERVOUS SYSTEM.

Great interest and activity have been exhibited during the past few years in investigating the functions of the sympathetic nervous system, its influences on normal and disease processes and particularly on the removal of those influences as a means of cure or at least relief in certain diseases. A real difficulty has been lack of knowledge on a very fundamental point-how far some diseases are essentially due to primary sympathetic disease. Researches done, however, show that there is now no doubt that the influences of the sympathetic nervous system may be damped down or removed with great benefit to sufferers in certain diseases.

In Raynaud's disease excellent results have been obtained with sympathectomy, especially in the young before secondary anatomical changes have been established. The pathology of the disease is still debated. Raynaud himself thought that the disease was caused by Vasospasm due to central chronic sympathetic activity. Other writers however have shown that Raynaud patients may still have vascular spastic crises even after a central sympathectomy. Whatever the cause, it cannot be denied that the operation diminishes the severity of the disease very considerably. The operation performed is excision of the stellate ganglion (i.e. the lowest cervical and first sympathetic ganglia) or, better still, section of the thoracic sympathetic trunk and removal of accessible ganglia through a posterior operation. This latter however, is a difficult operation but its one

great advantage is that it suppresses the efferent impulses to the limbs from the thoracic spinal segments.

For many years surgeons have sought a means whereby the pains of Angina Pectoris could be relieved or even abolished. Clearly nothing can be done for the disease itself, for even now there is no certainty as to the precise mechanism by which Anginal attacks are produced. Operations would have to be limited necessarily to the section of the afferent nerves. The usual descriptions of the innervation of the heart, the coronary arteries, and the aorta are absolutely incomplete because they are not precise as to which sympathetic nerves are motor and which sensory. Recent reserarches on these lines show that not only do fibres run to the heart from the three ganglia of the cervical sympathetic chain as the superior, middle and inferior cardiac nerves but that a further series connect it up with the upper four to six thoracic intercostal nerves. The various complicated and ingenious sympathetic ganglionectomies, need not be particularised here. Tedious and different dissections were their greatest draw-backs. These open operations have now been succeeded by another method relatively simple and much more effective in relieving pains. This consists in the deep injection of Alcohol into these nerves whose area is erradiated by the pain of Angina namely, the eighth cervical and upper sixth or seventh thoracic. The alcoholic injections are made as close as possible to the sides of the bodies of the vertebrae, the object being to destroy not the intercostal nerves themselves, but the sympathetic fibres running to them from the heart. A preliminary injection of Novocain is always done to determine whether the more permanent injection will succeed. The relief thus obtained usually lasts for several months, when a second injection can be carried out. The amount of alcohol injected is 5.0. c.c. for each nerve, those of the left side being blocked first, and those of the right side, later, if necessary.

Surgery of the sympathetic system is also being used more frequently in the cure of the painful complications of Tabes. At the present day, thanks to the improvements of syphilitic therapy, cases of Tabetic gastric crises are comparatively rare. But cases do still occur and provide most difficult problems. Posterior root section and sub-diaphragmatic vagotomy have been tried but not with very good results. As in angina pectoris surgical failure has been the result of imperfect knowledge of the paths which carry the pain to the sensorium. This knowledge however has been gradually increasing and division of the sympathetic rami which carry impulses from viscera to the lower thoracic spinal cord has given results comparable with any so far achieved. The operation consists in resection of the intercostal nerves as close as possible to the sides of the bodies of the vertebrae, after removal of the transverse processes. An essential



part of the operation, is the securing and dividing of the sympathetic rami joining the spinal nerves. The nerves to be severed will be those which careful pre-operative study of each individual has shown to be the chief source of pain, usually the seventh to eleventh thoracics on one side or the other.

The next big group where surgery of the sympathetics will be useful are the cases of chronic arterial occlusion including cases of arterio-Sclerosis and cases of thrombo-angitis obliterans. In those distressing cases where the circulation is failing usually in the lower limbs because of chronic endarterial proliferation, we have long felt the need for some operation which would give relief. Pain is often severe and unremitting and the patient is threatened with amputation of one or both limbs. It is quite clear that sympathectomy cannot cause occluded vessels to recanalize but it could come to dilate such vessels as are not too severely diseased, thus relieving a threatened extremity.

However, the good that is expected of these surgical measures entirely depends on the condition of the diseased and non-diseased vessels in the affected area, and to the stage the disease has progressed. Thus it is important to perform some tests to know whether there are any vessels capable of permanent relaxation. Experience has lent us tests to fulfil this object and the principle of all these, circles round the measurement in the skin-temperature after dilatation has been produced by operative measures. To succesfully combat the disease, wise selection of cases should be made, on the method described above.

Hirschsprung's Disease is another disease where sympathetic operation, in one of its numerous methods is now regarded as a useful procedure. This disease is really a state of unbalance between the sympathetic and para sympathetic sections of supply from the autonomic nervous system. Good results have been reported in these cases by lumbar sympathectomy. The left chain is removed by a transperitonal exposure, and is favoured by many. In cases of extensive dilatations both chains are resected, which include the second, third and the fourth Ganglia. The combined results recorded by Surgeons on the continent and elsewhere are most encouraging. Pain due to advanced malignant diseases of the cervix, and dysmenorrhoea has been relieved by the resection of the para sacral nerve. Intolerable pain due to tuberculous cystitis may also be checked by this operation. Retention of urine subsequent to spinal cord injuries and some spinal disease have been treated by excision of the para sacral nerve with success, but this method should be used with caution in males, as it supresses the ejaculation.

Retinitis Pigmentosa. characterised by degeneration of the retina due to the spasm of and degeneration of the retinal arteries, has also come within the range of Sympathectomy. Useful vision has been recorded in these cases after the section of the sympathetic but as to the condition of the vessels, after operation, detailed observations are wanting.

We have only attempted to give in these pages a brief outline of the surgery of the sympathetic Nervous System, and we would refer our more interested readers to the Medical Annual 1932, for further resume on the subject.

# Gleanings from Medical Press.

## SURGERY.

**Maggots in the Treatment of Osteomyelitis.** – The treatment of acute and chronic osteomyelitis by the introduction of fly larvae is comparatively new—so new, in fact, that it has not yet appeared in many of the newer text books on surgical treatment.

When first introduced it was supposed that maggots were effective in the treatment of osteomyelitis because of their mechanical action. They were supposed to digest and destroy bacteria and necrotic material, thus rendering such matters inert; and further by their rapid motion and activity, stimulate a rapid outpouring of blood serum which is in itself healing. A little later it was noticed that the pH of the blood serum in the wound was increased. Sill further observations indicated that the maggots which were introduced into the wound would live only a short time and, if new crops were introduced successively, after about the fifth introduction no maggots would live. It is now supposed that death occurs because the pH of the wound has increased and because some substance has been produced through the contact of the live maggots with the tissues which so increases in virulence that with time the maggots are killed by its potency. For want of better name the authors have called this substance a "therapeutic active principle."

Animal experiments have shown that this additional "agent" which was developed through the contact of the maggots with living tissue was in itself a curative substance. That an additional agent was improbable in effecting a cure seemed clearly demonstrated by the use of filtered extracts from the bodies of crushed larvae. In a recent report by Livingston and French they advanced the opinion that the active principle is contained within the body of the larvae, and in support of this theory advanced the observation that filtered, uncontaminated products derived from the bodies of larvae in cultures, when brought into contact with pyogenic organisms, destroyed the cultures. The active principle was obtained by grinding live maggots in sterile saline solutions and filtering the product through coarse and fine Berkefeld filters. Due care was taken to insure sterility and the standardization of the products for potency was made by standard methods. Recently solid substances have been obtained from such filtrates, which to date are of unknown composition. Chemical analysis and animal experimentation are now being attempted to prove the nature of these healing substances. The vaccine used by these authors was an autogenous or polyvalent suspension of killed organisms counted and fortified by the active principle and tested for sterility. They observed that a vaccine of killed organisms in saline solution without active principle fortification did not prove sufficient.



The work of these authors, as well as the supporting evidence obtained by many other authors, would indicate that this form of treatment is a decided advance in the handling of these obstinate cases. In all of the larger medical centers and in many of the smaller ones this treatment is now being employed, and adequte material for properly controlling the treatment have been inaugurated. Recently Livingston and French have reported one hundred cases of chronic osteomyelitis, infected wounds, and compound fractures treated by the active principle and vaccine with or without the use of live maggots. They report that 88 per cent of their cases have been satisfactorily healed. Chronic leg ulcers, sinus infections, and mastoid infections are now being treated by this active principle and vaccine. Results as yet cannot be stated. Three cases of long standing middle ear disease have been healed.

Wilson Doan and Miller have reported twentysix consecutive cases of acutc or chronic osteomyelitis which have been treated with fly larvae during the past eighteen monthes, with a complete cure in twenty-two cases. The average healing time, according to these authors, for all cases was ten weeks. For those lesions occurring in children the period was seven weeks. They point out that the type of scar remaining is a distinct improvement in that there is an obliteration of the cavity occasioned by operation and the diseased process through the ingrowth of healthy granulatiou tissues with at least partial restoration of the blood supply. These authors emphasize the fact that the best surgical judgment must always be exercised in the individual case and precede the treatment with fly larve if satisfactory results are to be obtained.—*Journal of Iowa State Medical Society.*

## MEDICINE AND THERAPEUTICS.

**Avertin and the treatment of its by-effects.**—E. Domanig—University Clinic, Graz. (*Vienna Clin. Wschr. 1931, No. 36, p. 1129.*)

The systematic employment of drugs like camphor, cardiazol, lobelin, hexeton, thyroxin and coramin, which influence respiration and circulation in cases of Avertin narcosis, gave more or less the same results, as found by Killian. The author observed, however, best results with higher doses of coramin, confirming thereby the previous experiments of Killian and Moerl. Whereas small doses of this drug (2·2 c.c.) intravenously did not show any appreciable result, the author observed excellent results without any by-effects whatever with doses between 6-8 c.c. of the 25% solution, intravenously. However, the after-sleep is not appreciably decreased. Intramuscular injection of coramin does not give such a quick result; the effect, however, lasts longer than that after intravenous injections, where the effect usually disappears after 10 to 15 minutes. In rabbits, it was possible to delay the fatal issue of the lethal Avertin dose (0·6 gm. per kilo body-weight per rectum) with coramin (1-2 c.c. intravenously every hour), but the same could not be altogether avoided. Through simultaneous administration of coramin (1 c.c.) with soporofic dose of Avertin (0·05 gm. per kilo body-weight), it was possible to prevent the sleep altogether. However, although the results were quite satisfactory generally, the author gives warning against becoming too optimistic with regard to this drug in Avertin narcosis in case of human subjects.

In cases of rapid fall of blood pressure due to shock, during Avertin narcosis, the author employed ephedrin, ephetonin and racedrin with equally good results: the blood-pressure being increased by 20 to 60 mm. Hg.

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**The Control of Avertin Narcosis.**—H. Killian, University Clinic for Surgery, Freiburgh. (*Klin. Wschr. 1931, No. 31, p. 1446.*)

The author examined various possibilities to wake up patients from the sleep after Avertin narcosis and employed therefor cardiazol, coramin, hexeton, camphor, ephedrin, lobelin and thyroxin. It was shown that ephedrin and thyroxin are without any effect whatsoever. Camphor again showed only its well-known effects upon the respiration, and nothing more. A very good influence upon the respiration was, however, shown by hexeton and cardiazol, but the depth of the sleep was not so markedly influenced as with coramin. How coramin brings about the termination of the narcosis is, however not yet clear. Coramin can be mixed with Avertin, as it does not react with the narcotic drug itself. Toxic-effects have never been



observed. The lethal dose for coramin for an adult would be 1 oz. of the 100% substance, whereas the usual solution and ampoules which are available for the trade, contains only 25%. However, ⅓ oz. of the 25% solution was usually sufficient to reduce the slumber after Avertin narcosis, according to the requirements of the physician. In emergency cases, the intravenous injection of coramin (once or twice 2½—5 c.c. of the 25% solution) is clearly indicated, and the action sets in very promptly. In ordinary cases, where according to the impression of the physician, the post narcotic sleep has lasted too long, an intramuscular injection of 2—3 c.c. of the 50% solution may be safely relied upon.

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**The Treatment of Hemicrania with Hormone of the anterior lobe of pituitary gland**:—By Klausner—Cronheim. (*Deutsche Mediz. Wochscs. 1931, No. 34, p. 1455.*).

As attacks of hemicrania usually disappear during pregnancy, but reappear after the termination of the condition, the authors conclude that deficiency of anterior lobe hormone of the pituitary gland, the latter being present in large quantities in circulation, during pregnancy, could well be made responsible for it. Accordingly, they treated 10 cases of hemicrania by giving 1 tablet of Prolan, twice daily. There were 3 failures, but in 7 cases the results were very satisfactory. The attacks were either diminished in strength or disappeared entirely. However, an increase in menstrual flow usually followed, and in one case of 48 years-old woman, who had entered menopause, metorrhagia took place. The authors conclude that the Prolan fraction A, but not the Prolan fraction B, works as antispasmodic and consequently against hemicrania.

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**Experience with the new local anaesthetic, Pantocain, in surface anaesthesia**:—By E. Theissing (University Clinic for Ear, Nose & Throat Diseases, Bonn), (*Ztsehr. Laryng., Rhinolog., Otolog. und there Grenzgebiete 1931, Bd. 21, H. 5.*)

For several months, the author has successfully used Pantocain in every case of ear, nose and throat diseases, where formerly cocain was employed. He administered a 2% solution with or without the addition or Surprarenin. He states that a 1% solution is not sufficient in every case. Usually 2 minims of Suprarenin were administered to each c.c. of a 2% solution. Pantocain produces a slight anæmia of the field, which seems to be of definite advantage over Percain, which produces hyperaemia. Consequently, in surface anaesthesia, Pantocain can also be used without the addition of Suprarenin. In all cases the results were equally effective, as compared to those achieved with a 10% cocain solution. By-effects were never observed, not even in children.

## OPHTHALMOLOGY.

**Practical points in ophthalmic practice: Study of recent food researches.**—Laura A. Lane, Minneapolis (Journal A.M.A., Feb. 27, 1932), sets forth evidence showing that one of the most constant signs of food deficiency is the pigmentation of the conjunctiva and the reduction of the light sense. The retina stores vitamin A, and an avitaminosis causes an increase of lipoids in the rods of the retina and decreases this visual purple. Lack of vitamin A has been responsible for epidemics of hemeralopia, xerophthalmia and keratomalacia. Vitamin A is largely stored in the liver and is much depleted in chronic illness; it appears to be concerned largely with preventing infection. Vitamin B is necessary to good nutrition. Lack of B causes nervousness and irritability, and patients complain of the eyes tiring easily. Vitamin B concentrate added to the diet of those suffering from uveitis of unknown etiology is beneficial. A lack of vitamin C, combined with a calcium deficiency, may be responsible for repeated vitreous hemorrhage of unknown etiology. The mineral salts are potent substances concerned in regulating the physiologic processes of the body. Calcium is more frequently deficient in American diets than any of the other mineral elements. Calcium deficiency occurs in vernal conjunctivitis. The complexity of the protein constituents of foods is shown. Proteins of poor quality can cause ophthalmia. The consumption of carbohydrates is often two or three times the amount required for good nutrition. Excessive use of carbohydrates has been known to cause inflammatory diseases of the eye. Excessive fat diets deficient in mineral elements and vitamins cause hyperplasia of the tissues. The problem of food intake concerns itself with sufficient mineral elements and protective substances to maintain proper equilibrium of the body fluids and tissues.—*Journal of the Oklahama State Medical Association.*

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**Inorganic Constituents of Normal and Cataractous Lenses.**—G. Mackay and his associates at the Edinburgh Royal Infirmary (*British Journal of Ophthalmology*, 16: 193, April 1932) report a study of the dry weight, weight of ash and inorganic constituents in 18 normal and 27 cataractous lenses. The cataractous lenses were definitely smaller than the normal lenses, their dry weight varying from 30 to 50.6 mg., as compared with normal 53.7 to 67.5 mg. The weight of the ash of the cataractous lenses averaged only slightly less than that of the normal lenses, so that the percentage of ash in the cataractous lenses was greater than normal. The inorganic constituents of the normal lens were found to differ from those of



normal aqueous humor (and blood plasma). In the normal lens the potassium was greatly in excess of the sodium; the calcium was very low; and chlorine less than equivalent to sodium. In the aqueous humor, the sodium was in excess of the potassium; the calcium about 5 mg. per cent., the chlorine about equivalent to sodium. In the cataractous lenses there was a tendency to take on a composition simular to that of the aqueous humor and the blood plasma. The sodium predominated over the potassium, although the latter remained higher than in blood plasma; the chloride was increased; but the most notable change was the marked increase in calcium both absolutely and relatively to the other ions. These changes were progressive as the cataract matured. There was no evidence that the calcium was the first constituent to alter, but the much greater increase of calcium as compared with that of the other inorganic ions during the development of cataract indicates some special connection with the production of opacity.—*Medical Times and Long Island Med. Journal.*

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# Correspondence.

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## THE ANDHRA MEDICAL CONFERENCE

The idea of the Andhra Medical Conference, if I am right was first conceived of by the members of the medical profession at Rajahmundry in the year 1928. The first or the priliminary session was held under the Presidency of the Honourable Dr. U. Rama Rao in the same year and delegates from all parts of the Andhra attended it. A constitution committe was formed and was asked to frame a constitution and to submit its report to a special session of the conference. It was also further agreed that this conference should hold its session at least once a year, and that each district in its turn may invite the conference. The regular session as well as the special session were invited to be held by the West Godavari District. So the special session was held at Ellore in the latter part of the same year and the constitution with the necessary modifications was adopted. Later, according to the above understanding the next regular session was also invited and held at Ellore in 1929 April. Eversince the country came to be engaged in the political struggle the idea of the conference fell to the background. Eversince, if we follow the precedent of inviting the conference the choice of inviting the conference has been of either the Vizag or Kristna Districts, which has not been utilised.

Eversince the last conference much water has flown down the Godavari. There were so many changes in the country. The medical politics has also changed. The B.M.C. has withdrawn the recognition for the Indian Medical degrees. The All India Medical Bill which is vitally concerned with medical profession in India has been introduced into the Assembly and has been referred to a select committe also. As could be gathered by the news paper there is every liklihood of the Bill as approved by the Select Committe being considered by the Assembly and passed into law either in the next sessions or special November session.

It has been made clear by the Indian Medical Association at its last annual session at Calcutta to the medical profession and public the hollowness of the bill as sponsored by the Government and also the fact that it was only done to placate the British Medical council. There is very little chance of the Bill being sufficiently amended before it is passed into law unless proper steps are taken and an agitation on constitutional lines is made. The Indian Medical Association has shown in its reply to the Government about this Bill how it has to be substantially amended before it is acceptable to the Medical profession in India. It has even appointed a committee to convass public opinion, and also that of the Assembly members in its favour. Other asssociations and prominent individuals who can speak for a large majority of the Medical profession of India have condemned the Bill in unqualified terms. So it will be suicidal to our interests unless the Andhra Medical profession also passes its verdict upon the bill and lends its helping hand to the Indian Medical Association like a true friend, in its hour of need.

Besides this, there are equally other matters of importance vitally concerned with the medical profession, such as the honorary system of service in state hospitals, the question of raising both general and medical educational standards of the medical licentiates, the necessity of revoking by the Govt. order requiring a second certificate when one is already granted by a private practitioner, etc., which require our close consideration. The proper ground for considering these is the Andhra Medical conference. It is better it is held early before it is too late (i. e. before All India Medical Bill comes for consideration of the Assembly). It will be more useful if it can be held in a central place in the Andra to facilitate the largest number of delegates to attend.

Before I close, I appeal to the Medical profession in the Andra and put them a question whether they are prepared to be lulled into inactivity and indifference when the honour of the Indian Medical profession is at stake, or whether they will rise to the occasion as one man

to help themselves and to keep the banner of prestige and honour of the Indian Medical profession flying unfettered by any extraneous interference ?.

S. SATYANARAYANA, L.M.P.,
*Ex-Secretary of the Tanuku Medical Association, West Godavari Dt.*

## RURAL MEDICAL RELIEF.

Government have been pleased to pass orders on the resolutions passed at the third provincial conference of The Madras Provincial Rural Medical Practitioners' Association and discussed at the time of a deputation to The Hon'ble the Chief Minister on the 4th and 5th April 1932, The following is a summary.

The present policy of the Government is, not to sanction the opening of rural dispensaries in places where private practitioners have already settled down. In opening rural dispensaries government advise the taluk boards to give preference to the natives of the place in the matter of appointing rural medical practitioners and midwives thereto. The Association's request for an increase in the subsidy cannot be entertained at present on account of financial stringency, but government have no objection to the taluk boards paying additional subsidies from their own funds and would also advise the local boards to provide accommodation for the dispensary and the practitioner on such terms as may be agreed upon. Midwives will not be placed under the control of the practitioners but will be directed to attend the dispensaries during office hours if they have no midwifery work.

In the matter of inoculation work, government consider that rural medical practitioners should, if required by the Presidents of taluk boards or officers of the Health Department, attend to inoculation work after dispensary duty, on a remuneration of nine pies per individual inoculated: subject to a minimum of rupee one and a maximum of rupees five per day in addition to the allowance, if any for journey beyond five miles, the government subsidy for the days so engaged not being deductable. For duties in connection with fairs and festivals, the rural medical practitioners will be paid Rs. 5 a day travelling allowance, if any, for journeys beyond five miles.

In the matter of leave to rural medical practitioners, government consider that the continued absence from duty for more than three months should be a ground for terminating the Agreement and that the period of casual leave now limited to 15 days, be converted into leave of absence for the same period without any limit as to the number of days for which a rural medical practitioner

can be absent at a time. The Government have however no objection to the grant of leave for more than 15 days provided the President, taluk board finds a substitute or the practitioner himself arranges for one acceptable to the President. The maximum period for which the subsidy is admissible while no one is on duty at the dispensary is limited to 15 days in a year".

Government will issue, in due course orders on the question of disbursing the subsidy through the District Medical Officer instead of through the President, taluk board.

Subsidised rural medical practitioners can have copies of the Government order on application to the undersigned; such of them as are in arrears of their subscription will have copies only when they have remitted it. In future it is proposed to send to individual practitioners copies of all G. Os. circulars etc., issued in a quarter at the beginning of the next quarter.

VIRAGANUR,
*Salem Dt.*
*18-8-1932.*

S. RAMASUBBU. L. M. & S.,
*Secretary,*
*The Madras Provincial Rural Medical Practitioners Association.*

## TRICHINOPOLY DISTRICT MEDICAL ASSOCIATION.

A monthly clinical meeting of the District Medical Association was held on 9—7--32 in the Government Head quarters Hospital when about 45 members were present. Dr. S. Padmanapa Sarma M.B.C.M. the District Medical Officer, and President of the association presided. Before the meeting commenced, the President was "At Home" to the members.

Dr. R. Sambasivan M.B.B.S. exhibited a case of mastoid in an old man of 70 which he had successfully operated. This was followed by a discussion in which the president, Dr. Rajan and Dr. Kalyanasundaram participated, the latter giving his experience of a case in a girl of 10 who had complete paralysis and aphasia for 3 months and recovered completely within 24 hrs. after operation.

Dr. T.S.S. Rajan exhibited two cases. One was a Psoas abscess. Before admission into his clinic the patient had undergone an operation for suppurating inguinal gland on the right side and the Psoas abscess was partially draining through this opening. The patient was running a temperature of upto 102 degrees. A confirmatory x ray was taken by injecting Bismuth into the cavity. Under spinal anaesthesia the incision was enlarged, glands near the region were enucleated and the sinus track scraped as far as it could be reached. The wound was partially closed by Sutures. Irrigations and instillations of B.I.P. and rest and open air treatment for nearly three months completely cured the patient.



The other one was a bad case of Tubercle of the left lung and tubercular ulcerations of the intestines. Here too the diagonosis was confirmed by x-ray skiagrams. The patient was put on sanitorium treatment and intestinal condition treated symptomatically. For the lungs artificial pneumothorax was carried out. The patient upto now had 6 fillings the last fill being 350 C. C. The patient has shown remarkable progress in general condition and temperature being normal. Dr, K.R.N. Chary exhibited a case of worms in a boy of 10 who simulated Pneumonia and was cured by giving Santonin and expelling the worms only by vomiting.

Dr. R. Sambasivan then read a paper on vitamins a precis of which is published elsewhere in this issue.

At the conclusion of the paper there was a lively discussion in which many members took part. Dr. T. S. S. Rajan giving his experiences of Jail diet said that in spite of Col. McCarrison crying hoarse for improvement and more vitamin diet for convicts, the authorities were still deaf to the needs of convicts. Dr. T. V. S. Sastry hoped that the authorities might at least allow butter milk to convicts and their rations might be of better quality.

In winding up the proceedings, the president Dr. Sarma, observed that in tubercular abscess. the further away the surgeon, the better and if surgical interference was necessary care must be taken not to infect the wound with secondary organisms and congratulated Dr. Rajan on the success of his cases. Regarding the mastoid he described the conservative operation and the radical operation and gave his experiences. Coming to the paper on vitamins he congratulated Dr. Sambasivan on his excellent paper read and pleaded for more members investigating the vitamin contents of ordinary articles of South Indian diet such as vegetables especially butter milk. He welcomed Dr. T. V. S. Shastry back to the association and its activities.

Rao Bahadur T. M. Narayanaswami Pillai M. A. B. L., M.L.C. President, District Board, who was present at the meeting promised to sanction travelling allowance to doctors under his charge for attending the meetings.

With a vote of thanks the meeting terminated.

TRICHINOPOLY
*20-7-32.*

P. A. S. RAGHAVAN,
*Secretary*
*District Medical Association.*

## "OUR POINT OF VIEW".

*A L.M.P. Writes :—*

For the last few years there has been the persistent cry for improving the status of the L. M. Ps, and the various Licentiates'. Associations in the Province have sent in memorial after memorial to the Government putting forth their considered opinion on the matter. The Licentiates of Madras have waited in Deputation upon the Minister and the Surgeon General on many an occasion and impressed upon them the urgency of the problem. Even non-official gentlemen who are not members of the medical profession, have opened their eyes to the seriousness of the situation and have begun to stress the need for the reforms as insistently as the licentiates themselves. It is only proper at this stage when the matter is said to be engaging the attention of the Government that we youngsters of the profession attempt to give expression to our feelings on a question of such transcendental importance to us.

We are convinced that only with the advent of the Five years' course in the Medical Schools that has been repeatedly promised to us by the Governmentl we shall be in a position to meet on even terms graduates of the college, and to claim emphatically that we are not handicapped with an inferior training. We have therefore time and again endeavoured to the best of our abilities to point out that things cannot go on any more as they are. We also feel that the elders have always been responsible to some extent for the apathy and indifference of the Government in that they have not been able to present their case with the weight of argument and emphasis of a whole fraternity of Licentiated medical practitioners who form the back bone of the medical profession in this Presidency.

It was more than three years ago, if I remember right, that the Government in accordance with the insistent demands of the profession and the members of the local Legislative Council, set up a committee to enquire into the conditions of the medical education in the Province. It is a matter of common knowledge, how the committee examined prominent medical men and registered evidence at the various medical institutions, and how after months of arduous labour they sent in their unanimous findings and recommendations to the Government. Ever since that, we thought we had entered a new phase of our life and that the Government would formulate those proposals in the nature of a definite programme of work, and would introduce the reforms that the committee in one voice had urged them to do. The fate of those recommendations at the hands of the powers that be, provides melancholy reflection. We were continually made to understand that the proposals were engaging the most anxious attention of both the minister and the Surgeon General with the result, that at the present moment we are after all no



nearer to the goal than we were a few years ago. What a panorama of events and men and things rises before our eyes when we make a survey over the last two or three years; the changes in the Ministery and departmental head, the refusal by the general medical council of Great Britain to recognize the university degrees of India, the hue and cry for the establishment of the all India Medical Council and the belated introduction by the Government in the Legislative Assembly of a measure that has raised such a storm of protest from responsible men all over the country. And in the midst of it all comes the thunderstorm blasting all our hopes and burying them five fathoms deep, I mean the thunderstorm of financial stringency and retrenchment under which plea the Government only too often unblushingly take shelter when accused of promises unfulfilled and obligations not discharged.

It has been our experience that wherever we go we are dubbed as inferiorly qualified men, cheap doctors to use our time honoured name, whose consultation fee is small, whose medicines are cheap and whose market value is low. Every moment of our lives we feel we are looked down upon by the more privileged members of the profession, neglected by those stalwarts in service tolerated as a necessary evil by the public, atleast by the so called educated public and permitted to exist by the Government for serving their own ends. Perhaps I may be elaborating the feeling of what they call an inferiority complex but I am sure, the most supreme self confidence will melt in the heat of such insistent denunciations. I take this opportunity of reiterating the sentiment with all the emphasis at my command that we more than anybody else are conscious of our limitations and that we are not asking for the smallest privilege that we do not legitimately deserve. We feel the old institution of cheap doctors has outlived its usefulness and that it is time that the standard of education obtained in the medical schools should be raised.

We are told that the majority of applicants for the recent selections of students for the medical schools was comprised by either passed or unpassed intermediate candidates. Information is to hand that out of the 60 students admitted into the Royapuram Medical school, 12 have passed one or two parts of the B.A. Examination, 14 are intermediates, 19 are school finals who have passed one or two parts of the Intermediate and the remaining number S.S.L.C.S. When intermediate candidates are available in such abundance, where is the harm in raising the general educational qualification from the school final to the intermediate according to the recommendation of the old Committee? There was a time when fully passed school finals who applied for admission into

the medical schools were not enough to meet the requirements of the committee for selection, who under the circumstances used to admit with the sanction of the Govt. even failed school finals provided such candidates passed in English and in their optional subjects. Times have changed. Our Arts colleges both in the city and in the mofussil are manufacturing intermediates and graduates even on a commercial basis. Again those of us who have undergone the four year's course in the school, feel that an intermediate candidate would be better able to understand and assimilate thoroughly the subtleties and intricacies of the sciences we are taught. But then one may ask? Where is the difference between an M. B. and an L. M. P.? That is just the point; that there will not be and should not be any difference at all. It is because there is that difference now that we are shouting for reforms.

If the ultimate end and aim of all the education imparted in the medical schools is to provide the people of the province with a sufficient number of qualified medical men, why not give those students the benefit of one more year's training, so that they may be better fitted to treat the cases entrusted to their care and thus to discharge their obligations to the society to the fullest extent? Medical education is imparted in the course of four years in no country in the world except India. Why should here alone be this low standard when we have set up high standards in all other branches of learning? We are not concerned nor are we surprised at the obstructionist tactics of the acadamic council of the university in heaping up unnecessary disabilities in the way of our joining the medical college. We are convinced that those of us who aspire for higher academical qualifications will hold their own true to their traditions, as we have never imagined that either the cold of England or even the inspiring portals of the medical college will ever produce the smallest anatomical or physiological change in the convulsion of one's brain. The university after much wrangling among themselves have after all technically allowed licentiates to sit for the degree examinations. But what they have given by the right hand they have taken away by the left. To pass the intermediate or an examination similar to it, five years to elapse after passing final L. M. P. examination before sitting for final M. B., to attend classes regularly in the college for two years, and to pass successively 1st M. B. 2nd M. B. and final M.B,. all these are not practical politics but very near an impossibility for the average L.M.P. for quite obvious reasons. It is only a half-hearted gesture on the part, of the Syndicate, meeting our demands not even half way.

It was only a few days ago that the Royapuram Medical Students' union at a meeting unanimously passed resolutions requesting



the Government to raise the minimum number of marks for a pass in the Board examinations from 33% to 50% and to introduce the five years course at the earliest possible opportunity. Is not this fact enough to show that we youngsters are pulsating with a new spirit and that we are determined to pursue the high road of progress? Progress is the law of nature and we feel none has the right to deny it to us. Our exclusion from the proposed All India Medical council has not also come as any shock to us. It was a foregone conclusion and we are only strengthened in our belief that so loug as our standard of education is not raised we shall have to remain disenfranchised. It is only a truism to say that public recognition must necessarily follow any improvement in the character and efficiency of our training, and that efficiency which all of us fondly visualise and eagerly welcome shall be achieved only when the course of studies be increased to five years. In one word we stand for progress in the field of medical education. The excuse of financial stringency put forward by the Government for their indifference fails to convince us. The Government if only they set about it seriously can have this reform introduced, without upsetting their finances to any great extent, thus broadbasing the medical institutions not on the flimsy and untenable foundation of economy or large numbers but on the solid and invulnerable one of progress.

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## L. M. P. BOARD EXAMINATIONS.—5 YEARS COURSE AN IMMEDIATE NECESSITY PRIOR TO THE RAISING OF THE PERCENTAGE OF PASS MARKS.

It has been now authoritatively confirmed that "Orders have been issued already raising the percentage of pass marks to 40, in the case of the 1st, 2nd and 3rd. year Board Examinations and to 50 in the case of the Final Examination."

Although this was one of the resolutions unanimously passed at a public meeting held under the auspices of the All-India-Medical Licentiates' Association, Madras Branch, on 16-7-32, with The Hon'ble Diwan Bahadur B. Muniswami Nayadu Garu, B.A.B.L., Chief Minister to the Government of Madras, in the chair, I wish to bring to the notice of the Government and the public that, a mere raise in the percentage of pass marks without giving effect to the most important resolution i. e. "the course of medical instruction imparted in the medical schools in this presidency be raised to *5 years forthwith*." unanimously passed the same day and which has been the very first recommendadion of the committee of the Government on Medical Education in the Presidency, will not serve the purpose for which the resolution is aimed.

In fact this new order has made hard grounds for the students to stand the strain of the increased standard of examination. It is only the blessed very few could hope to attain to this level without an extra year's study. Speaking from experience and from affairs abroad, I think an average medical student must have two years hard study in medicine and surgery before he appears for his final examination. Without giving him this primary right of ploughing hard in the field of medicine and without providing him with the necessary preliminaries i. e., to increase the course of instruction, which would only facilitate him for such hard labour it will not stand to reason or to the four corners of justice for the authorities concerned to insist on a 50 percent standard with four years course.

The question of " Financial Stringency ", the only reason put forward by the Government to put off this popular demand for raising the course to 5 years can easily be solved if only, the Government were to take into their head this matter scriously. " Where there is a will there is a way " will apply here. The abolition of several medical schools in the presidency has stopped the drain of annual expenses ; the positive enhancement of School-fees will add to the finance ; lakhs of money poured over the construction of the new Rayapuram Hospital and medical hostel buildings, well equipped with all the latest and up to date requirements, will suffice to stand the strain of an extra year's study for a medical student; and the influx of honorary medical officers with high academical qualifications and much experience in the teaching as well as the independent profession, over-enthusiastic to impart clinical instructions to medical students will minimise the teaching expenses. A rigid control over admissions into medical schools as it has been done this year, will amply provide practical facilities that are now available to undergo an year's extra study.

In view of the foregoing points it would be clear that the reason put forward by the Government " financial stringency " to put off the extension of the L. M. P. Course, stands on weak grounds and as such I earnestly appeal to the authorities concerned to put into execution forthwith the recomendations of their own committee and the most popular demand from the professsion for increasing the course to 5 years and thus put an end to the caste system in the profession and afford ample opportunities for the medicoes to stand the strain of the raised standard of examination.

Madras.
31st July, 1932.

U. D. GOPALAN,
*Secretary, The All India Medical Licentiates Association, Madras Branch.*

When writing to advertisers please mention the "Antiseptic."

## THE ALL INDIA MEDICAL LICENTIATES ASSOCIATION, MADRAS BRANCH.

At a clinical meeting of the above Association held on the 30th May 1932 at 6 p.m. at "Gana Mandir", 10, Thambu Chetty Street, Dr. A. Visvanathan read a paper on "Some interesting case notes" under the Presidency of Lt. Col., J. M. Skinner, Superintendent, Government General Hospital, Madras.

Speaking in defence of the General Medical Practitioner who being destined to come across all kinds of cases is given less opportunities to observe cases and give exact statistical details and other records in support of his conclusions, the learned Doctor still dealt at length on several very interesting cases and thus traversed through entire field of Medicine, Surgery, mid-wifery mentioning the virulence and various complications of malarial fever such as unconsciousness, hiccough etc. The Doctor pointed out the economic and other best advantages gained by the administrations of Quinine intravenously wherein the maximum effect can be realized by a minimum quantity of Quinine. Points of very great diagnostic interest were mentioned in cases of hanging, suicidal and homicidal, typhoid fever, convulsions, hysteria and other gynæcological cases. Some clinical cases of diagnostic interest were also shown in the end. When the subject was thrown open for discussion Dr. R. Ramanjalu Naidu the Vice-President of the Association explained the exact technique of intravenous administration of Quinine and its great advantage in all cases of malaria and thus cleared the doubt about the supposed danger of this kind of therapeutic route. Lt. Col., Skinner while expressing his gratification to meet this gathering that evening pointed out the several advantages of exchanging case notes by open discussions. He also mentioned an interesting case of malaria which he had to treat in the Agency tracts at Ganjam. He also paid a tribute to Dr. A. Visvanathan for the interesting paper read that evening.

The meeting terminated with a vote of thanks proposed by Dr. Venkappa the Provincial Secretary to Lt. Col., J. H. Skinner, Dr. A. Visvanathan, the gentlemen present and the authorities of the hall.

C. D. GOPAL RAO,
*Hony. Secretary.*

# Book Reviews.

**Tuberculosis—Its treatment and cure with the help of Umckaloabo.**—By an English Physician, M.R.C.S. (England) & L.R.C.P. (London). [B. Fraser & Co., 62, Pepy's Road, Cottenham Park, London S.W.] Price 3sh 6d.

The author of the book seems to be well known to the publishers but wishes to remain anonymous as he might otherwise be charged by the British Medical Association of unprofessional conduct in advertising a quack remedy.

The author has analysed the history of over 50 cases of tuberculosis, pulmonary and surgical treated in different parts of England with Umckaloabo. Many of these cases had apparently been treated by the modern methods of treatment which had failed and Umckaloabo was resorted to as a last resource. The after histories of many of these cases have been followed up to show that the effect of the treatment with Umckaloabo has been a lasting one and not a temporary one. Many of these cases are said to have been examined by independent medical men later on and declared to be free from tuberculosis and some were even passed as first class lives by insurance companies. Most of them have resumed their ordinary avocations and some are doing hard work without fatigue.

Looking into the details of the cases one is struck with the fact that a large number of these cases, had previous observation and treatment at tuberculosis dispensaries, hospitals and sanatoria with either no benefit or the subsequent onset of relapses and the final adoption of Umckaloabo treatment marked the turning point in their progress towards permanent recovery.

The remarkable results recorded in the book make one pause and consider why a drug of such efficacy has not come into general use. It would appear that more extended trials of the drug in the hands of physicians with a special clinical knowledge and experience of tuberculosis is necessary before Umckaloabo can be recognized as a specific for the disease.—*M.K.P.*

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**The Treatment of Tuberculosis with Umckaloabo 2nd Ed.**:—By Dr. Adrien Sechehaye. [B. Fraser & Co., London S.W.] Price 5sh.

The book deals with a description of the therapeutic effects of the South African drug prepared by Mr. Ch. H. Stevens who was once himself a patient suffering from tuberculosis of the lung and is said to have been cured by its use in 1897. Since then the drug has been used on a number of tuberculous patients and the book describes how Dr. Sechehaye of Geneva since 1920 treated cases of tuberculosis with it with great success. The drug is said to be



effective in both pulmonary and surgical forms of tuberculosis in all stages. It is said to be non-toxic and to have no antiseptic properties in vitro against the tubercle bacillus.

The author gives details of 64 cases of tuberculosis of different types and stages treated with Umckaloabo and considers that this drug has a specific action on the disease, the exact nature of which he cannot judge, though he considers it must be one of neutralization of the tubercle toxin.

The drug is not contraindicated in any but the acutest types of tuberculosis and haemoptysis and other complications do not constitute barriers to its employment. Even in cases simultaneously treated by Sanatorium methods and other kinds of special treatment like artificial pneumothorax, Dr. Sechehaye considers Umckaloabo plays an important part in the recovery. The advantages claimed for the drug are the absence of toxicity, the ease with which it can be prepared and administered, the possibility of its being given per rectum if oral administration be found to be difficult due to intolerance and the moderate cost of the treatment.

In view of the fact that the drug has not found general favour with the medical world, the observations of Dr. Sechehaye require confirmation by further trial by other medical men. The author contends that the unsuccessful legal actions taken by Mr. Stevens against the British Medical Association which branded him with infamy have been a great handicap in popularizing the specific but it is difficult to believe how a drug with marked specific value could ever fail to gain a foothold in the therapeutics of a highly prevalent and fatal disease like tuberculosis.—*M.K.P.*

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**An Introduction to Tropical Pathology**:—By T. Bhaskara Menon, M.D. M.R.C.P. Acting Prof. of Pathology, Medical College, Vizagapatam, sometimes Assistant Prof. of Pathology, Medical College, Madras, 210 pages, illustrated 1931.. [Thacker Spink & Co., Post Box 54, Calcutta]. Rs. 10.

It was Prof. G. W. Maccullum who first showed us the value of linking up morbid anatomy with infectious processes and thus considering any disease process as a whole instead of piecemeal. The value of such a method of studying diseases is obvious. Dr. Bhaskara Menon has discussed most of the important tropical diseases in this manner in a very interesting and instructive manner. It is intended for the undergraduate students in the tropics where the requirements in Pathology are somewhat different from those of students in Europe. The first fifteen chapters are devoted to the common tropical infections and infestations—bacterial, spirochaetal, protozoal and helminthic. Special mention can be made of those chapters dealing with Mycetoma, Rhisiosporidiasis, and the diseases of unknown or

indefinite causation such as Beri-beri. Pellagra, Sprue, Infantile cirrhosis etc. A chapter on autopsies in the tropics and another on important laboratory methods for the tropics complete a very handy, and valuable and well illustrated introduction to tropical pathology. We congratulate Dr. Bhaskara Menon on his task and recommend it to all students and practitioners.—*U.K.R.*

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**Surgery of the Genito-Unrinary Tract**:—Modern Treatment series by Ralph Coyte M.B., B.S. (Lond.), F.R.C.S. (Eng.) Jonathan Cape Ltd. 30, Bedford sq,, London. Indian Agents. Butterworth & Co. Ltd., P.B. 251. Calcutta, 1932.] Pp. 127. Price Sh. 5/ net.

This is one of the latest of the books belonging to this series. The aim of this little book is to present to the busy general practitioner in clear form a brief conspectus of such genito-urinary surgical treatment as can be carried out by him in his daily work. All the conditions that are commonly met with in general practice are dealt with briefly and succinctly. The book is divided into nine chapters. The first chapter deals with the instruments that are used in genito-urinary practice. Surgical anatomy of the urethra, bladder and the kidneys are given in the next chapter. Diseases of the kidneys and ureters, bladder and prostate, and of the urethra are discussed in the chapters following. The last section is devoted to the consideration of the diseases of the Scrotum, Testes and Epididymis. Cystoscopy and urethroscopy form the subject for the eighth chapter in the book. The ninth chapter is devoted to the operations on the Kidney and Ureter.

The book contains many practical hints and suggestions that will be found useful by students and practitioners.—*V.C.S.*

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**A History of Applied Entomology** by Dr. L.O. Howard. 1930. [Smithsonian Institute of Washington, U.S.A.] $2.25

Though in the words of the author the account may be somewhat annecdotal the publication is a very comprehensive volume on the rise and progress of Applied Entomology all over the world. The fact that such a famous man as Dr. L. O. Howard is the author will in itself be sufficient testimony to indicate how interesting and valuable the publication is sure to be for workers in this field of Entomology. It is only in the fitness of things that the author who was only recently retired from active service as Chief of the Bureau of Entomology, United States Department of Agriculture, after a long and remarkable service of more than fifty years and who is the accepted '*doyen*' among the Economic Entomologists of the present day, should put down in record a work of this nature which is evidently a summary of the author's accumulated notes and valuable experiences. No one else in our opinion would be so very competent to write



such a history. It is needless to add how very interesting and helpful the information contained in the work will prove for workers in this line in all countries.

Though Applied Entomology (Economic Entomology) is a science of recent origin compared to the other branches of Biology the growth of this particular branch of study "has been very rapid and its study is expanding like the traditional snow ball." "Its origin" in the words of Dr. Howard "has been so recent that there has been no demand for a historial record of its growth." The appearance of this work, therefore, is very timely and would supply to Entomologists all over the world in a nutshell facts and figures regarding the rise and progress of Economic Entomology from the earliest time to the present day.

After giving us an idea in the Introductory Chapter, of the chief motives that led him to prepare this volume the author deals with the subject in seven different parts. The first six of these deal with the rise and progress of Economic Entomology in the the world, viz., (i) *N. America*, (ii) *Europe*, (iii) *Asia*, (iv) *Africa*, (v) *Australasia*, and (vi) *Central and South America with the West Indies*. The seventh part is devoted to the important subject of Medical Entomology, an interesting account of the numerous personal experiences of the author with famous workers in this line of study, and finally to the various attempts made in different parts of the world in the Biological methods of pest control by the study and utilisation of predatory and parasitic insects. The volume finally concludes with a series of fifty-one plates including the photographs of a galaxy of well-known workers in the field of Economic Entomology during the past one hundred years or more.

A glance through the first six parts will give one a very succinct account of the progress of the science in the different parts of the world and especially of the detailed knowledge and information the author has been able to collect from different corners of the world. The matter contained in these seven parts forms a mine of information on various aspects of Economic Entomic Entomology. It includes something about men, insecticides, well-known pests, legislation against pests, journals in Entomology, Entomological societies, chief writers on the subject in different countries and various items of international work done by Institutions devoted to this subject in different parts of the world. In fact the publication very clearly and beautifully elaborates on the chief aims of the author laid down in his introduction, *viz.*, 1. To impress on everybody the enormous importance of the study of insects that this study is one of vital importance to humanity; 2. To show all entomologists that, no matter what aspect of the subject they are studying, they are doing work of vital importance and are greatly helping mankind

in the effort to prevent all friction between museum and laboratory men and economic workers; 3. To show the great body of scientific men that entomology and entomologists, including economic entomologists, are doing sound and important scientifie work which should command their respect; 4. To bring about a solidarity among the entomologists of the world on the broad ground that the insect danger is one to all humanity regardless of national affiliation. We are gratified to find that in dealing with the work in various countries the author has not only not omitted to refer to the growth of this science in India but has been kind enough to remark with regard to entomological work that—"Madras stands out first among the provinces"—and refers to the filling up of the post of Government Entomologist by a *Native Entomologist*—Mr. (now Dr.) T. V. Ramakrishna Ayyar in 1914. Reference is also made to other Indians who became Entomologists later such as Messrs. Y. Ramachandra Rao, Afzal Hussain, S. C. Ghosh and the late Dr. K. Kunhikannam of Mysore.

On the whole the publication contains plenty of information not only on the subject but also a good deal regarding the army of workers all over the world; and the series of photographs at the end, besides giving an idea of the personalities of some of these pioneers in this science, helps future workers to get inspirations in this field of science. We are only sorry that there is no photograph of the author which should have had its place as the 'Frontispiece'!. We would suggest to every economic entomologist to possess a copy of this very valuable publication and there is no doubt that this work will be an ornament to any library of scientific books.—*T.V.R.*

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**XIth Annual Report of the Calcutta Dental College and Hospital (1931-32)** :—We have great pleasure to accept and read the 11th Annual Report of the Calcuttta Dental College and Hospital under the able and enterprising Principal Dr. R. Ahmed D.D.S. We note that the college has "continued to progress in spite of the very depressing times we are passing through" and "16 students passed out from the college last year. The total number of students on the rolls this year is 60 compared to 54 of last year and represents almost every province of India". About 6000 patients were treated and nearly 500 received artificial Dentures. The progress denotes not only the enthusiasm of the Principal but also the increasing demand for dental requirements of the people under the influence of western civilization as well as for Dental Training. It is however unfortunate that the Government has not yet persuaded itself to start a well-equipped Dental School in the whole continent of India, and afford facilities for dental education and dental relief



a necessary measure to keep off ill-health—the duty of the state.—*H. V. Rao.*

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**The Indian Medical Council and Associate problems**--By C. P. Chaube M.B.B.S., No 7. Rajpur Road Delhi, Price Rs. 1—8—0.

The burning topic of the hour among the Medical Profession in India is "The Indian Medical Council and Associate Problems" and any book which throws light on these problems is both welcome and opportune. The author has taken considerable pains to trace the history of the Allopathic Medicine in India from the dawn of the British Rule to the present day and his opinion on the Indian Medical Council Bill, now before the Legislative anvil is at once forceful and convincing. The book will certainly afford the Medical Profession an intelligent grasp of the present question by "The Indian Medical Council" and we therefore heartily commend it to our readers.

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# Preparations & Inventions.

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*Children*—Prophylactic daily dose, 15 to 20 drops; curative daily dose, 20 to 30 drops.

*Adults*—Ten to 15 drops three times daily as indicated.

Parke-Davis Haliverol is supplied in 5 cc. amber bottles and 50 cc. with a dropper to facilitate the removal and measurement of the desired dose. Literature will be sent to physicans on request from Parke Davis & Company. P.O. Box 88. Bombay.

## Notice.

The subscribers of the Antiseptic having by a majority of votes declared in favour of Venereal Diseases', it is notified that the subject for the next special issue in July '33 will be "Venereal Diseases".

## Obituary.

We regret to have to announce the death of *Sir Ronald Ross*, in London on 16th September 1932 after prolonged illness, at the ripe age of 75 years. His name is a household word among the Medical Profession and is associated with the remarkable discovery of Malarial parasites in Mosquitoes, which has helped to save millions of mankind in all parts of the Globe from that dreaded and deadly scourge, Malaria. His life sketch will appear in our next issue.

Vol. XXIX. No. 10.

# The Antiseptic



## A Monthly Medical Journal

EDITED BY

Dr. U. RAMA RAU & U. KRISHNA RAU, M.B., B.S.

CONTENTS.



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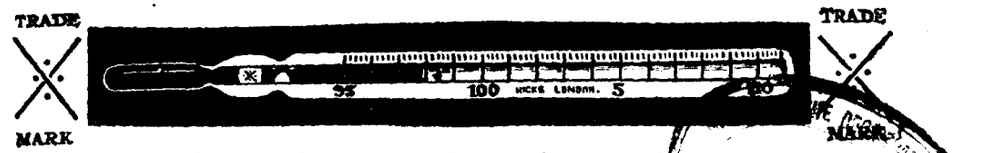


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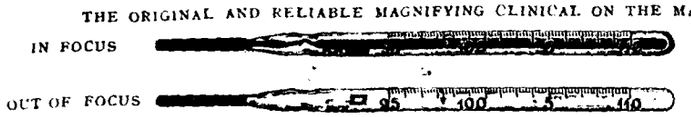


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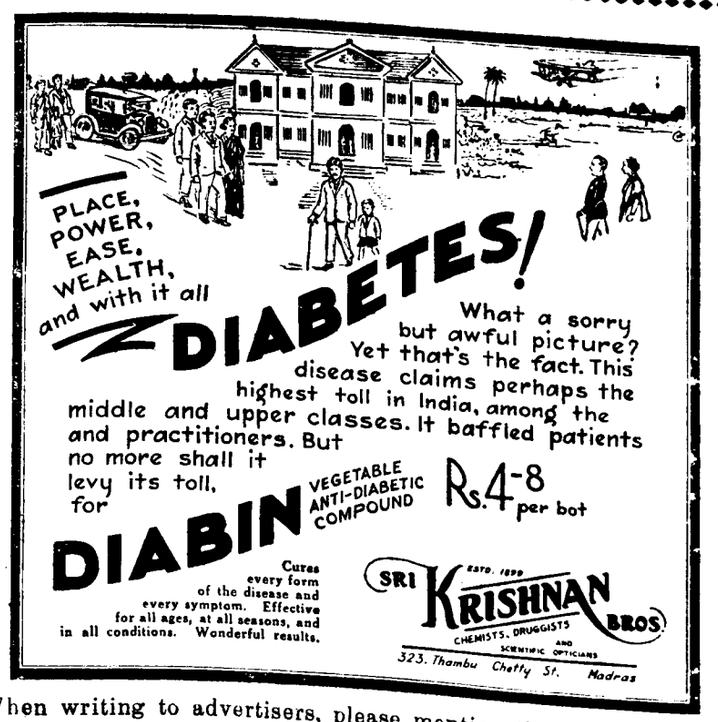

The late Sir RONALD ROSS. I.M.S.

*By Courtesy Medical Annual 1932*

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## Original Articles.

### PYELITIS IN INFANCY AND CHILDHOOD.*

BY

DR. JAMES BURNET, M.A., M.D., F.R.C.P., (Edin),

*Lecturer on Diseases of Children, School of Medicine of the Royal Colleges, Edinburgh.*

There is a condition which causes a high temperature in infants and children which is often overlooked, and which in many cases the general practitioner is entirely ignorant of. That condition is pyelitis, an inflammation of the hilus of the kidney. A simple pyelitis is not in itself a very deadly condition, but, if unchecked, may lead to a pyelonephritis, and eventually to a pyonephrosis and death.

There are many varieties of pyelitis, but we may select four for consideration, two in infancy and two in childhood. The two in infancy which we refer to are the ordinary simple type and what is often termed the cerebral type of the disease. The following typical case of the simple variety as it is met with in infants will make the symptoms perfectly clear. A female infant *aet* six months becomes very cross and fretful. The temperature registers 104·5° Fahrenheit. There may be vomiting. Constipation or diarrhœa may be complained of. The infant goes off its feeds. The skin is often dry, and the temperature swings about to a great extent. Now it may fall to almost normal, and in a few hours rise again to an abnormal height. All the time there is little urine passed. Perhaps

* Specially contributed to the "Antiseptic."

pneumonia is thought of. On examination of the abdomen, there is often tenderness especially over the right side. An examination of the urine at once clears up the diagnosis. The urine is turbid, is acid and contains more or less pus. Under the microscope numerous B. Coli are found present.

Then there is the so-called cerebral type in infants. Here is a typical instance of this variety. I was asked to see an infant a female of 15 months. For two days it had been lying listless as if in a stupor with head somewhat retracted. It absolutely refused food. The doctor in attendance diagnosed meningitis. The temperature had varied from 103·8° to 106·2° Fahrenheit. At my visit the temperature was actually just over 105°. Examination of the chest revealed nothing. The abdomen seemed normal. As the appearance of the child did not suggest meningitis to my mind I asked that a sample of urine should be obtained from a napkin and sent to me. This was done, and the urine was found to be strongly acid, contained pus cells, and B. Coli. Under treatment this infant made a rapid and complete recovery.

In children the condition may be either acute or chronic. An example of the chronic, recurring type may be referred to. A girl of 12 years had been seen in consultation by a well-known specialist who diagnosed latent tuberculosis. The family doctor was dissatisfied and asked me to see the patient. She was a very thin, ill-nourished child. There was a history of attacks of shivering and fever which recurred at intervals of a few weeks. Examination of the urine proved it to be acid, to contain pus and B. Coli. Treatment directed towards making the urine alkaline proved highly successful, and the attacks completely ceased.

The urine of adults is examined as a routine, why not that of infants and children? Many a case of pyelitis remains undiagnosed because of this. In such cases the urine is acid, contains pus cells, and bacilli coli. These are very readily detected under the microscope. Some cases simulate meningitis, others suggest pneumonia, appendicitis, and tuberculosis. It is only by a thorough investigation of the urine in these cases that the diagnosis is cleared up.

The prognosis is quite good if the case is diagnosed and treated early. If not, there is always some risk lest the kidney tissue itself becomes infected, when we get a pyelonephritis supervening. In such a case there will be more albumen present in the urine than can be accounted for by the amount of pus found present.

*Now as to treatment.* Some American research worker has discovered that in the laboratory B. Coli will grow in an alkaline medium. That is in the laboratory. It is totally different clinically. I have yet to find a straightforward case of pyelitis which will not yield to treatment by alkalies, especially to large and frequently repeated doses of potassii citras. As soon as the urine becomes alkaline the temperature returns to normal, and will remain so unless the remedy is stopped too soon. It is a good plan, therefore, to continue the administration of the citrate in reduced doses for some days after the temperature has reached normal. Hexamine and vaccines may be used in some intractable cases, but they cannot be depended on to yield uniformly successful results. Early treatment of acute cases by alkalies, with plenty of fluid to drink, will completely cure the majority of cases of pyelitis met with in infants and children.



## ANOMALIES IN THE MUSCLES IN MAN AND THEIR SIGNIFICANCE*

BY

DR. D. SIVASUBRAHMANIAM, M.R.C.S., (Eng.) L.R.C.P., (Lond.)

*Medical College, Vizagapatam.*

*Introduction.*—The general practitioner when once he leaves the portals of a medical institution has very few opportunities to refresh himself with the subject of Anatomy—let alone the anomalies recorded from time to time and their significance. It may sound rather far fetched that these changes in a few muscles and other structures in the body are so very important, but unless the incidence or presence of such anomalies is fully borne in mind, it is at times difficult to arrive at a correct diagnosis or explain some peculiar features. As an instance in point, I may mention here the incidence of the supracondylar process in man, which, though rare, is liable to be confused with pathological tumours in the lower end of the humerus. As one, who had the privilege of working in the anatomy department for now over 12 years I am giving out my observations as recorded by me. I must herein acknowledge my sincere thanks to Dr. R. Krishna Rau, F.R.C.S.E. Professor of Anatomy, Medical College, Vizagapatam for his valuable advice in systematising my observations and helping me to publish the same.

*Morphology.*—Any one dissecting an amphibian or reptile for the first time will be impressed with the small amount of tendon entering into the composition of the muscles. This is very striking when the musculature of the amphibian is compared with that of a mammal. The arrangement of the fibres in tendon strongly resembles that of the fasciculi in the belly of a muscle. It is very difficult to determine how the muscle and tendon are joined or by what means the union is

*Specially contributed to the "Antiseptic."

brought about for the parts become insensibly blended with each other. It must be borne in mind that all tendons of muscles are not present at birth. In the Psoas magnus, the tendon is absent in infants. The intermediate tendon of the omo-hyoid appears only at about the 20th year. Thus as evolution proceeds various changes occur and similarly as growth advances, changes also occur.

*Development of muscles.*—The secondary mesoderm which appears after the formation of the primitive streak, breaks up into somites, a portion of which becomes the myotome or muscle plate. Each muscle plate is supplied by its corresponding segmental nerve, and even when the muscles deviate or migrate from their first segmental arrangement, the distribution of the nerves remains unaltered. (c.f. The Phrenic nerve coming from the 4th cervical segment supplying the diaphragm).

*Anomalies of muscles.*—The commonest abnormality that is frequently met with in the dissection hall and I dare say many of the readers will also remember, is the extra head or heads of origin of the Biceps Brachii muscle. Normally it has got two heads of origin one short head arising from the tip of the Coracoid process of the scapula in conjunction with the Coraco-Brachialis and another long head arising from the Supra-Glenoid tubercle of the Scapula and the upper part of the Glenoidal labrum. Extra heads of origin arise from the humerus. It may be one or two heads. Books describe even 3 extra heads but so far, I have noticed only two extra heads. When these are seen, they arise from the neck of the Humerus below the lesser tubercle of the Humerus, and from the front of the Humerus anterior to the brachialis muscle and also in relation with the medial intermuscular septum. By tendinous fibres, the origin is seen ascending as far as the capsule of the shoulder joint. The muscle in all probability had a Humeral head as it exists in many lower mammals. It is a normal feature in the Gibbon although not in the other simidial. The incidence of this abnormal head is 1 in 10.

*Action of the Biceps*—On the elbow joint it acts as a Flexor-supinator: on the shoulder joint it acts as a fixation muscle. The flexion of the forearm can be brought about either in the position of extreme pronation or extreme supination or in any position intermediate between these two. The Biceps acts most strongly in the midposition or in extreme supination. It would have been noticed that a greater amount of weight can be lifted by elbow flexion with the supinated hand, than with the pronated hand. When the forearm is not supine and when the elbow joint is flexed, the first movement that is initiated is supination and then flexion proceeds.

*Coraco-Brachialis.*—This muscle also shows extra heads of origin. Though rarely, the incidence being about 1%. It usually arises



from the tip of the coracoid process of the Scapula between the lesser pectoral muscle and the short head of the Biceps. It is intimately conjoined with the latter. It belongs to the adductor group of muscles. In the thigh, the adductor sheet is powerfully developed and continued to the lower end of the femur in the adductor magnus muscle but in the arm, the adductor sheet is suppressed. It seems to be developed from a premuscular sheet common to it, the Biceps, and the Brachialis Anticus (same nerve supplying all the three muscles). Wood demonstrates three portions of this muscle (1) a proximal part arising from the coracoid process and inserted into the Humerus close to the lesser tubercle (2) a middle part corresponding to that usually described in human Anatomy (3) a distal part which is the largest and most superficially placed. It descends to the medial epicondyle of the Humerus or near it and is inserted into a supra-condylar process if such exists. This distal portion is occasionally noticed in the dissection hall and is seen running to the medial epicondyle of the Humerus. In the specimens of the supra condylar process that we noticed here there was no attachment of this coraco-brachialis. So it does not follow that the supracondylar process should be coexistent with this third head. When the 3rd head is present it is seen extending to the medial epicondyle invariably but when the supra condylar process is present it may be attached to the same. In one instance this muscle was noticed to be attached to the medial head of the triceps by means of a thin fasciculus.

*Pronator Radii Teres.—3rd head*—The most interesting variety is the extension of the origin upwards to become attached to the Supra-condylar process. In such cases the course of the Brachial artery is usually changed. Even when the Supra-condylar process is not present an accessory head is seen springing from the medial intermuscular septum. Very often the coronoid head is absent; In the insertion it often rises up in the Radius to a considerable extent.

*Palmaris Longus*—Is either absent or very poorly developed. This belongs to the class known as retrogressive muscles and along with the Palmar aponeurosis represents the most superficial portion of the Primitive Common Flexor. When present it arises by long tendonous fibres from the angle of the medial epicondyle, from the septa between it and the adjoining muscles and from the fascia of the forearms. The fleshy belly is replaced by a tendon in the middle of the forearm and is seen running down as far as the volar annular ligament (Transverse carpal ligament) where it broadens out and ends in the Palmar aponeurosis. It sends a slip to the Abductor Pollicis Brevis, on either side. The fibres spreadout over the thenar and the hypothenar eminences; the stronger central fibres are continued into

the central part of the Palmar aponeurosis; occasionally at its insertion, this is seen to be attached to the fascia of the forearm, the flexor carpinularis, the transverse carpal ligament, the navicular or the Pisiform bones. In this connection, it will not be out of place to describe a little more about the Palmar fascia and the Palmar spaces in the hand as they are very important for surgical practice. The Palmar fascia or aponeurosis consists principally of longitudinal fibres derived principally from tendon of Palmaris longus with a few fibres also derived from the volar articular ligament. The longitudinal fibres spread out as they descend but are collected in greater number over the tendons. The fibres which occur in the intervals between the tendons, end in the overlying skin. On the ulnar side the fibres spread out over the hypothenar eminence while on the Radial side a broad bundle extends into the skinfold between the thumb and the index finger. The fibres of the digital bands extend on to the bases of the fingers and there lose themselves in the fibrous tissues and skin. The skin attachments are specially close over the metacarpophalangeal joint causing the depressions here between the interdigital swellings. Other fibres in the distal part of the palm turn backwards on each side of the tendons to join the deep layer of fascia and the transverse metacarpal ligament so as to form secondary sheaths for each pair of tendons. The tranverse fibres at the end of the fingers are placed deep to the longitudinal fibres and are stretched across the heads of the metacarpal bones. Thus the Palmar aponeurosis is narrow above, where it is directly continuous with the tendon of the Palmaris Longus, and expanded below where it is stretched across the heads of the metacarpal bones from the second to the fifth. It presents an irregular lower border owing to the fact that it is prolonged on the bases of the fingers as four processes which lose themselves on the digital sheaths. It is continuous on each side by transverse fibres which emerge from it with the fascia over the thenar and the hypothenar eminences. Here it is also continuous with the deep fascia over the interosseous muscles by two thin septa one on each side. These septa divide the palm into three compartments, a radial containing the short muscles of the thumb and its long flexor tendon, an ulnar containing the short muscles of the little finger and the long flexor tendons to the little finger; and a middle, containing the long flexor tendons to index, middle and ring fingers.

*Abductor Pollicis Longus.*—(Extensor ossis metacarpi pollicis). This tendon has been seen coming in two distinct slips one slip getting itself inserted into the base of the metacarpal bone of the thumb and the other slip blending with the lateral margin of the transverse carpal ligament. A very interesting abnormality was recently noticed as regards this muscle. This Abductor Pollicis



longus was represented as two distinct muscles from start to finish. Deep to the usual Abductor Pollicis Longus, and arising from the dorsal aspect of the antibrachial interosseous membrane, a very narrow fusiform muscle was seen taking origin. This soon gave place to a narrow tendon which was running in the same compartment along with the main Abductor pollicis longus on the lateral side of the Styloid Process of the Radius and when it reached the lateral margin of the transvere carpal ligament it was seen to blend with the ligaments. From where the tendon blends with the transvere corpal ligament, the Abductor Pollicis Brevis muscle was seen to take origin. In fact it was even doubted whether the Abductor Policis Brevis is not seen in continuation of the tendon of this abnormal Abductor Pollicis longus.

*The Psoas major.*—This muscle was seen in two longitudinal strata with the intervention of a fascial septum.

*The Psoas minor.*—It is well developed and constant in most lowest animals. It is however very often absent in man. It is said according to statistics that it is present in 50% of bodies but as far as my observations go here, I can safely say it is present only in about 10% of cases.

*The Pectineus.*—It was noticed during the last 3 years in 3 specimens. There the Pectineus muscle was found in two distinct lamellae and receiving two distinct nerves, the medial and the deeper lamellae receives its nerve supply from the obturator nerve the lateral and the superficial stratum receiving its nerve supply from the Femoral or the Anterier crural nerve. This division in two strata occurs naturally in many lower mammals as well as in many lower primates. The probable explanation is that the Pectineus is made up of two elements one derived from the Iliopsoas (Femeral nerve supply) and the other derived form the Adductor mass (obturator nerve supply.)

*Quadratus Femoris muscle.*—This musscle was absent in 2 cases (*i.e.*) in about the dissections of about 120 bodies during the last 2 years it was found absent twice, usually this muscle is seen below the Inferior gemellus but when it is absent, the Infr. Gemellus is unusually absent and the fusion between the Inferior gemellus and Add. magnus may also be noticed. In our observation such a fusion was noticed,

*Tibialis Anterior.*—The usual insertin of this tendon is in the lower part of the medial surface of the 1st cuneform bone and the contiguous extremity of the first metatarsal bone; but in some cases (described in the books) at least in one case as observed by me the tendon was actually in two slips from the beginning; (*i.e.*) from the distal part of the muscle, two tendenous bands were running down-

wards and there were probably the cuneal and the metatarsal bands. In lower primates it is said that this condition frequently occurs.

*Peroneous tertius.*—Described by some as essentially a human muscle but in many cases absent in the human body. Sometimes the Perneus tertius is very well developed. This muscle corresponds to the Extensor Digiti Quinti Proprious of the upper extremity. The insertion is on the outer side of the base of the 5th metatarsal bone for the support of the outer side of the foot in walking. In the upper extremity Ext Digiti Quinti is completely separated from the common extensor tendon but in the case of the Peroneus Tertius it is not so well detached from the extensor longus digitorum.

*Peroneus longus et Brevis.*—The Peroneal muscles represent the fibular marginal muscle developed from the extensor mass. In man, occasionally, the Peroneus Longus has been seen to take origin from the lateral condyle of the femur and it has been suggested that the fibular collateral ligament represents a primitive femoral attachment of the muscle. Extra slips of Peroneii muscles have been seen on the dorsum of the foot getting inserted (1) into the dorsum of the cuboid (2) the base of the 1st phalanx of the little toe, autogenetically the Extensor Brevis Digitorum is directly continuous with the Peroneal group.

*Gastocenemius.*—3rd head. This arises from the Popliteal surface of the Femur and may merge with the two heads at their junction. It is said then when present this slip may pass between the Popliteal artery and nerve.

*Plantaris.*—Very often absent in the common dissecting room specimens. Like the Palmaris longus, this muscle which is little developed in man, is the remains of the superficial layer of the original common flexor of the digits. In many animals it is of large size and is continued over the calcaneus bone, into the Plantar fascia. In man it is separated, as it were, into two parts a proximal part stopping short in the heel and a distal part in the sole of the foot.

*Popliteus.*—This represents the pronator element of the Flexor Pronator mass and corresponds with the upper head of the Pronator teres of the arm. It was originally a fibulotibial or interosseous muscle of which the fibular origin has been replaced by a secondary Femoral attachment. Though it usually lies anterior to the Popliteal vessels and nerve it may also lie posterior to the vessels and nerve.

*Flexor Brevis Digitorum.*—The small muscle slip to the little toe is frequently found wanting; or it may simply terminate in the fascia.



The stylohyoid muscle in the neck in 2 cases was absent on both sides. The posterior beley of the Digastric which is usually lying by its side was normal in size though the stylohyoid was absent.

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## DIFFICULT SURGICAL PROBLEMS IN CHILDREN.*

BY

J. DURLABH DHRUV, M.S., F.R.C.S.E., D.L.O.,

*Surgeon to Sir J. J. Hospital.*

*(Continued from p. 583, Antiseptic, August 1932.)*

PART III

SORETHROATS AND DIPHTHERIA.

This is a subject where decision and sense of responsibility should be very acute. Time and again we have seen cases of sorethroat ending fatally simply because no throat examination was made or Diphtheria was not thought of. If we could put down as a rule that in every ailing child, a throat examination is imperative, much good could be done.

The finding always of a membrane is difficult. Bactriological examination is no guide. Hoffmann's Bacillus is a distinct puzzle. Repeated negative bacteriological examination has ultimately revealed to us cases of Diphtheria. There were two children who were brought to us for regurgitation through nose after an attack of sore throat. In one of them three injections of antidiphtheritic serum were given on grounds of suspicion. This case shows that membrane may not be found in the tonsillar region and inadequate serum doses cannot prevent complications like paralysis of soft palate which may in some cases be a precursor of cardiac failure. It seems that limitations of bacteriological and radiological diagnosis are not sufficiently realised by us. (Scott Stevenson).

We have seen cases of Diphtheritic sore throat where children have collapsed from intense toxemia and tonsils were found in a gangrenous state. These cases are too late for specific treatment. Unfortunately, Diphtheretic sore throats are very insidious in their

* Specially contributed to the "Antiseptic".

onset, it is essentially a painless sorethroat without any considerable rise of temperature.

An initial rise of temperature above 102°F. and pain in the throat should be generally negative Diphtheria. A throat swab may be positive still it may not be a case of Diphtheria.

The foregoing axiom is true for clinical purposes. We have however found that if a throat is suspicious enough to swab, it is suspicious enough for the patient to have the antitoxin injected.

This is the safest course in clinical practice. We had cases where a membranous sorethroat was proved to be non-diphtheritic and sorethroats with small milk spots here and there in the tonsillar region ultimately were found to present diphtheritic symptoms and complications.

In every case of sorethroat a suspicion should be maintained about Diphtheria and this even after apparent recovery. These patients after recovery have eventually died all of a sudden in suspicious cases especially those where regurgitation through nose has been a late sequelae or tachycardia is a marked feature, absolute rest in bed at least for a period of six weeks should be rigidly enforced.

A piece of advice may be here whispered in the ear of a general practitioner. In every case of sorethroat, a prophylactie dose of specific serum would fortify his position to a considerable degree.

For differential diagnosis, acute streptococcus hæmolyticus infection of tonsils, Vincent's Angina and Follicular tonsillitis may be considered. Vincent's Angina is more or less a subacute condition and with but few constitutional symptoms. In follicular tonsillitis local discomfort is pronounced. In one case of streptococcus hoemolyticus infection, sweating, mild continued pyrexia and vague pains all over the body simulated enteric and all the symptoms ended after enucleation of tonsils.

Tracheotomy for acute inflammations of the throat as a means of aeration would be rarely resorted to if the original conditions were efficiently treated.

In laryngeal obstruction due to diphtheria, a massive dose of antidiphtheretic serum even in cyanosed cases would many times help to avert a tracheotomy. In this serious condition. the mortality following tracheotomy is certainly high and secondary hæmorrhage or broncho pneumeonia are common complications.

Peritonsillar abscess in children is not a rarity as is sometimes believed. We had to open abscess in both tonsils one after the other within an interval of a week in the same child aged 5 years.

A retropharyngeal abscess in a child causing pharyngeal obstruction is in majority of cases a suppuration in the post pharyngeal glands due to nasopharyngeal sepsis. It is rarely the result of spinal caries as is usually believed. We know one child with such an abscess, the size of a small lemon, brought from Surat, recovering after incisions from the mouth. Another child died on the operation table of Sir J. J. Hospital.

In the former, general anæsthesia was not given. In the latter, the child was chloroformed.

It is very dangerous to administer general anæsthetic to children suffering from retropharyngeal, peritonsillar abscesses. These abscesses could always be incised tactfully by firmly holding the child.



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## PSYCHOLOGICAL MEDICINE.

BY

MAJOR P. V. KARAMCHANDANI. M.B.B.S., M.R.C.P.E., A.I.R.O., I.M.S.

*Malaria Survey of India, Kausali.*

*(Continued from p. 661, Antiseptic, September 1932.)*

II

### INSANITY.

Craig defines insanity as "inability of the ego to adapt itself to its environments, Cole defines it as "perversion of ego" and Stephens "a state in which one or more of the mental functions are performed in an abnormal manner or are not performed, by reason of some lesion of the nervous system."

### WHAT ARE THE CAUSES OF INSANITY?

Apart from the effect of race, breeding, education, inheritance, occupation, age, and sex, there stand out two predominant causes: i, parentage, ii. constitution. One holding interference with normal function as primarily responsible, another associating structural alterations with causes of insanity. In reality the influence of both is obvious. This is how these two sets of opinions contend in the field of morbid psychology.

### I. SCHOOL BASING CAUSATION PREDISPOSING TO INSANITY ON PARENTAGE.

This school argues that mind is composed of groups of thoughts one time in harmony at another time in conflict. One bestowed with healthy parentage overcomes these conflicting ideas by ordinary process of will force and the same are forgotten. This happens in the life of everyone of us but every one does not become insane. In those inherited with weaker will this conflict predisposes to disturbance of mental func-

* Specially contributed to the "Antiseptic."

tion. The storm of conflict is obviated by processes carried beyond the borderline to a morbid length or is projected to end in considerable mental deterioration. Thus the storm of conflict when abated by invention of an excuse for a certain line of action which if ends in *self-deception* turns the man in considering himself what he is not, in other words development of delusions; he becomes a mono-maniac, paranoidal, egocentric. A person who is parentally an eccentric does not take long to become egocentric. This is plain enough. 2. If the storm is abated by a phenomenon of *projection*, phantasy or what laity call "day dreaming" he loses hold on the objective world, lives in an imaginary world of his creation, incognisant of those around him. In symbolism adopts poses expressing fulfilment of a desire which had no opportunity of expression in a normal way. Thus one mentally a microbe or physically very ugly may assume affectation of manners of the clever or handsome persons. This mannerism and affectation are frequent in dementia precox. Or again in projection self reproach for an error of conduct may be changed into reprobation of others. A homosexual paranoidal for instance by process of projection as Stoddart so admirably shows by psych-analysis "I love the man" then "I do not love the man" then "I hate him" and finally he flies to save himself or becomes hostile aggressive maniac with homicidal tedency. 3. If again the storm is put out of mental field by cultivating a different *field of activity*, virtually carrying himself out of himself he reaches a morbid length and pursues ceaseless, restless, irrelevant activities akin to insanity (cf. Don Quixote). 4. Or again by developing *opposite characteristics* eg: meticulous accuracy of expression in one with suppressed complex for untruth or prudery for love affair etc; carries same to an extent that it overbounds the limits of sanity and steps into a field where factors necessary for normal mental activity have no control.

II. SCHOOL BASING PREDISPOSING CAUSATION ON CONSTITUTION

This school traces genesis of predisposition to structural alterations and defective development. Thus we may have :—i. a group in which neuronic *development is imperfect* and includes cases from feeblemindedness to complete idiocy, hysteria, epilepsy and delusional insanity. ii. a group in which there occurs *neuronic degeneration* due to insufficient durability and includes climatric, senile and adolescent dementia. iii. a group in which neurons have become a subject of *toxic influence* and may include insanities of pregnancy, puerperum, melancholia etc; iv. a group with *gross cerebral lesions* and with complete deprivation of some special sense.

These two schools are not mutually exclusive specially when we consider how over lapping may occur when we consider that demeanour which is hasty, exitable and exhibiting positive play of emotions when watched, due to Exopthalmic goitre.....a pathological change, is allied to emotional instability due to relaxation of controlling influence by ego.....a psychological change. At some future date we hope to co-ordinate and consolidate both the schools of thought.



Apart from the general and individual causes above discussed there is usually some exciting factor, worry, excitement, fright and shock, induced insanity, intemperance, sexual excess, venereal disease, trauma, pregnancy and puerperium, uterine and ovarian disorders, privation and starvation, disturbances of internal secretions, any condition of stress or strain.

DIAGNOSIS OF INSANITY.

This is important from :—

(*a*) Legal point of view. Is the person suspected of a crime insane?

(*b*) Is the person of abnormal behaviour certifiable as insane?

(*c*) "Feigned insanity" is not infrequent.

Examination of the patient :—

(*a*) of mentality by conversing with him.

(*b*) of physical robustness, by a thorough examination of special senses, heart, lungs and bodily functions. It should be remembered that in "border-land" cases, physical debility may account for mental symptoms and when the former improves the latter automatically improves.

1. *History of the patient*.—Special attention should be paid to;
   (*a*) Heredity.
   (*b*) Early development i.e. age at which he talked, read etc;
   (*c*) Habits. { alcoholic and drugs. / sexual excesses, masturbation etc:
   (*d*) Fainting fits. Young women with petit-mal are put down as suffering from attacks of faintness thus epilepsy is left undiagnosed for years.
   (*e*) Any history of previous attack.
2. *Physical examinatien*.—Special note should be made of :—
   (*a*) General nutrition.
   (*b*) Condition of thyroid.
   (*c*) Pulse rate and Blood pressure.
   (*d*) Presence of any trophic changes.
   (*e*) Gait.
   (*f*) Reflexes.
   (*g*) Ocular abnormalities.
   (*h*) Wassermann reaction if cerebral syphilis suspected.

3. *Mental examination*; Special obsevation should be made of:—

*a*. Patient's expression.....melancholic, excited. vacant, apathetic.

*b*. Degree of attention and association of ideas. Put conventional questions and the reply will reveal above. Note any abnormality of speech simultaneously.

*c*. Delusions. Statement of relatives serves as guide but too much reliance must not be given to it. Tactful questions will obtain direct evidence for the doctor.

*d*. Obtain specimen of handwriting. This helps sometimes by affording further evidence thus:—small but coherent handwriting with words and sentences often repeated and underlined marks melancholia, incoherence and no relevance with good many flourishes and heiroglyphics suggests mania, while omission of words specially proper names, with limited choice of vocabulary is suspicious of G.P.I. It should be borne in mind that no definite rules can be laid down for eliciting signs and symptoms of insanity.

### CONDITIONS RESEMBLING INSANITY.

1. *Hysteria*:—This is more closely allied to insanity than is ordinarily supposed. There is a nervous instability in these cases. Freud's doctrine of psychogenesis which has attracted great attention of late, explains mental processes by scientific laws involving psychological terms only. Experience of the great war has taught us that even normal mind becomes subject to hysteria if the causes of the same are applied forcibly enough and for a long enough period (Macnamara). But these are extreme cases and point out how even a normal mind may become unhinged by excruciating circumstances overstepping the boundaries of human endurance and stress the importance of prophylaxis in cases inherited with propensity toward psychical upset of a negative emotional tone. Perhaps circumstances which would turn a normal mind into hysterical will turn the latter into insane. Existence of a psychical process of which the hysterical subject himself is unaware is assumed. This is how this "conception of unconcious mind "is explained in hysteria. Hysterical mind has a marked feeling tone, and ideational complexes resulting from psychical and physical trauma in him produce a conflict, being immiscible with his personality. He refuses to accept them and being in direct opposition, the mind is divided against itself. The conflict may be avoided but banishing one of the opposing and forgetting them entirely, but instead he either 'converts' them whereby emotional excitement (affect) brings about abnormal innervation, which is exteriorised as hysterical attack or 'tranposes' the effect through indifferent ideas, and the affect thus remains shut in the "unconscious mind". Exteriorization in this case occurs by heaping action what Cajal conceives 'avalanche" action or Freuid "over-determination". To cure the patient, the buried complex is raised in the memory by systematic psycho-analysis.



Other facts to be remembered about hysteria are that:—

*i*. Hysteria may be an early symptom of a greater mental disorder.

*ii*. Hysteria and insanity may alternate and present great difficulty in diagnosis.

*iii*. One member of family may be hysterical, another insane.

2. *Drug states*:—(*a*) Chloral habit may cause, melancholia, insomnia, emotional disturbance or suicidal states. When it leads to loss of control, patient's conduct simulates insanity.

(*b*) Opium habit causes derangement of moral character. Tremors, refusal of food, hallucination, reflex disorders and symptoms resembling delirium may occur.

(*c*) Cocaine habit causes intense excitement and moral degeneration.

(*d*) Alcoholism may be predisposing cause of insanity and must be ditinguished from acute mania while alcoholic intoxication leading to delirium tremens may pass into an attack of acute mania.

3. Hypochondriasis may simulate delusional insanity and when extreme may be regarded as insanity, because suicidal tendencies are frequent.

4. Delirium from various causes specially general febrile states and cerebral meningitis—distinguiseed from insanity by pyrexia, and head injuries by history of trauma. Febrile states may give rise to true insanity.

5. *Post epileptic automatism*:—Explains instances 'dual personality', where the patient after an epileptic fit becomes quite unawares of his whereabouts and actions and commits crimes of which he has no recollection afterwards.

6. *Feigned insanity*:—This always has a motive behind it either to escape punishment for a crime or avoid active service in the army. Careful watch of the conduct of the subject when he thinks he is unobserved helps detection in a malingerer.

III

INVOLUTION PSYCHOSES—MELANCHOLIA.

This is a form of insanity outstanding feature of which is "misery of the patient" expressed by facial expression, speech, attitude and moyements. The patient experiences extreme sadness from which he cannot detach his ideas. Introspection focussed on his inside brings into relief the normal functions which he did not percieve before and which now begin to reveal themselves to him as abnormal eg: he may feel his heart beating too loudly or moving about too freely, his intestines rolling about too furiously or his head turned into lead etc:. *Face* becomes drawn, sad and morose: *Speech* becomes monotonous with too many repetitions revealing fears of mind as if expecting disaster. *Attitude* becomes that of flexion or drooping, an outward expression of the bodily recoil in obedience to inward recoil of mind, ever introspecting. Like a crouching dog about to be whipped he seems to occupy the least space. Introspection centred on self often due to having committed what he terms the "unpardonable sin", narrows his field of *activity* so much so that performance of urgent calls ofnature like taking food, getting up to go to bed etc; or calls of duty like going to school, to work and so on become difficult and are performed under pressure. Self centering removes his affection for his wife and children. Tendency to suicide or self mutilation to save himself from the misery of sin which he thinks is not removeable otherwise, is common.

*Physical examination*: reveals what one may call a state of vaso motor instability. Heart beats are variable, sometimes fast, sometimes slow. blood pressure sometimes high otherwise low. tongue is furred, breath foul, digestion weak, bowels constipated and flatulent. Nervous system shows diminished knee reflexes, weak muscular power and relexed muscular tone. Face might show slightly icteric tinge whence the name of the disease. These are not gross lesions, but hypertoxic gastric juice and urine with low solid contents of the latter show that there is perhaps some abnormal metabolism, in other words this mental derangement may belong to the third group of second school.

This is a usual picture of simple melancholia, but he may manifest delusions and imagine his body converted into that of animal or his face having become too ugly...Kœnaesthetic parasthesia, so much so that if the same become fixed and systematised he becomes a delusional insane, or he may express remorse by agitative phenomenon, keep on wringing his hands nay even writhe on the floor restless. Finally again he may become stuporose, oblivious of exter-



nal surroundings like one paralysed with sorrow lost to the world and even incontinent.

*Prognosis and treatment.*—Prognosis is usually favourable before fifty.

*Treatment.*—Measures to keep the patient alive by forced feeding, watched to prevent suicide and rest in bed in open air are first things to be attended to. My treatment of these cases is: i. Of constipation, ii. Ringer Locke solution injections. Treatment of constipation must include Saline or Sulphur colonic washes, while Ringer Locke solution is given subcutaneously in 1000 ccm. doses twice a week up to 20 injections. I use two way asperation syringe of 100 ccm. and slowly inject the solution at a temperature of 105°F. The patient is propped up. Toxic cases show some rise of Temp, but this is followed by tranquil sleep and feeling of betterment. After 4th injection complexion shows signs of clearing and mental improvement sets in. The doctor should not therefore be discouraged if the first injection does not show marked improvement. I usually tell the patient's relations of this before hand. I have been so much satisfied that I can recommend this treatment quite confidently inspite of the apparent inconvenience of injecting 1000 ccm. When improvement sets in, the patient is permitted to sit in an easy chair.

Ringer Locke solution :—

℞

| | | |
|---|---|---|
| Sod: Chloride | ... | ʒii gr 19 |
| Pot: Chloride | ... | gr 6½ |
| Cal: Chloride | ... | gr 4 |
| Sodi Bicarb | ... | gr 8 |
| Glucose | .. | gr 16 |
| Distilled Water | ... | 1000 ccm. |

CONFUSIONAL INSANITIES—(EXHAUSTION PSYCHOSES.)

This is the form of insanity, outstanding feature of which is inhibition of the higher centres with loss of hearing in time and space. The patient though conscious, no longer recognises his surroundings or realises his own identity. Intoxication, acute or chronic and exhaustion are intimately connected with the ætiology; indeed severe forms of nerve exhaustion may be identical with milder forms of confusional insanity and if this fact has not been recognised before it is because the former have been treated as medical cases, the latter as lunatics.

Heredity plays a minor part. The condition may come on acutely in the wake of an acute illness nay even before the bodily symptoms of particular illness manifest themselves; thus I had a

malarial case who presented a typical picture of acute confusional insanity before the temperature showed signs of rising. He had extreme restlessness and disorientation, hallucinations and impulsive reactions of conduct. He was singing and shouting the whole night. The S.A.S on duty finding nothing bodily abnormal and the orderly on night duty thinking that he was malingering gave him a beating 2 to 3 times until I saw him in the morning and examined his blood which showed heavy M. T. infection. The symptoms and signs of profound general intoxication developed, the tongue became dry and cracked, sordes collected, tremor and subsultus tendinum appeared and the patient became frightfully ill. (Vide my paper Plasmochin Co: in treatment of Malaria *I.M.G. November 1929*).

Or it may set in insidiously with alteration in his usual temperament resulting from exaggerated bodily and mental weariness, so extreme as not to remain unnoticed. Thus I had a case one Dharamsing, Shopkeeper of Pishin, who had been carrying on Padma Asan and concentration exercises for 8 months under the guidance of a quack Yogi and it was noticed that his temperament changed. Whereas before he used to bargain with his customers, he now became quiet and transacted his business without much ado. He lost flesh and slept very little at night. This was attributed by all to the good results of Yogi's exercises. He developed delusions and hallucinations of fleeting character thus he would run upstairs and call everybody bidding them to behold the procession of Guru Gobindsingh and asking them if they heard blowing of conches and ringing of bells etc.: These delusions at first enhanced his religious repuation till he showed unmistakeable signs of insanity. He became confused and displayed defective orientation in time and space, hesitancy regarding his own identity, loss of memory for immediately past events, some times appeared little affected by objects of pleasure and pain, vacant almost stuporose and at other times incoherent, talkative restless and impulsive. He went to the Officer's Mess and expressing himself ruler of the World, became angry and violent when turned out. He was happy contented and pleased at one moment, agitated angry and violent at another throwing stones at people in the streets. When I examined him his general nutrition was poor, he had lost considerable weight, his tongue was furred, breath offensive, appetite poor and bowels constipated. His pulse was small, soft and fast but regular. Pupils were equal but sluggish in movement and tendon reflex exaggerated. These cases may be misdiagnosed as mania but most important and useful points of difference are that: i. In the maniac there is no loss of orientation, on the contrary, perception of environment is far more rapid than normal but little of what is happening around escaping his notice. Mental processes



instead of being blunted are so quickened and the procession of ideas so rapid through his mind that it is difficult for the observer to keep pace and he thinks the patient is incoherent. ii. The maniac remembers the events of illness, while the confused insane forgets them like a dream.

*Prognosis and Treatment.*—Majority of cases if well handled improve.

Cardinal points in treatment are:—

1. Treat the cause eg:—Influenza, Pneumonia, Septic infection or enteric etc: which are acute intoxications, or gastric, intestinal, renal, cardiac or other organic diseases which are chronic intoxications. Main object is to eliminate the toxins and mitigate their harmful effects.

2. Rest. Physical by keeping him in a well ventilated place and mental by, removing sights, sounds and other sources of sensation which stimulate, his perceptive apparatus.

3. Bowels should be regularly evacuated.

4. Diet should be nutritious, generous and easily assimilable. Daily record is necessary. I have found Sanatogen a good addition to the diet,

5. Hypnotics and Sedatives; These have special value and if success has not been so great it is because administration of these has been injudicious and irregular.

My favourable recipe is:—

| | |
|---|---|
| Sodium glycero phosphate | gr viii |
| Calcium glycero phosphate | gr iv |
| Pot: glycero phosphate | gr iv |
| Iron glycero phosphate | gr 1/3 |
| Lecithen | gr 1/16 |
| Avenin | gr 1/32 |
| Am: Bromide | gr vii |
| Cascara evacuant | ʒ½-1 |
| Glucose | ʒii |
| Alcohol | ʒi |
| Aqua | ʒi |

Mft: ʒi T.I.D. before food.

Ammonium Bromide used with Bromural in turn and with variation in doses, at different times usually yields good results.

Treatment is continued patiently and consistently for months and when improvement sets in cautiously relaxed. When good physical health is obtained a change is imperative.

MANIA.

Outstanding features of this form of insanity is abnormal activity of thinking, feeling and action. This mental derangement manifests itself in most cases about the 2nd and 3rd decades of life and is some way connected with family history of mental disorder and factors undermining the stamina of the individual. The onset may be gradual, marked by irritability of temper, insomnia, loss of appetite or it may be abrupt without any warning. Memory becomes too active and ideas flash across the mind so rapidly that the patient can neither control nor keep pace with them, the result being expressions which give the impressions of complete incoherence. Similarly his emotions become unrestrained, extreme and unstable. Thus he expresses his likes and dislikes freely and forcibly, which keep on changing. Thus he may become violent and abusive to one, of whom he may be normally very fond or with whom he may have been very friendly a few minutes before and *vice versa*. With the opposite sex he is inclined to be amorous. Just as his ideas and emotions are ungovernable so are his actions. He is impulsive constantly up and doing, singing, shouting, moving restlessly, absolutely proof to fatigue although sooner or later his face shows signs of weariness and becomes haggard and emaciated. He is unmindful about his person, although hardly anything around him escapes his notice. Hallucinations are rare, delusions fleeting, and tendency to suicide unusual.

Blood pressure, pulse, respiration and temperature are raised, appetite quite good, constipation a rule, genital excitement a special feature, loss of weight and insomnia very common.

*Prognosis and Treatment.*—Chances of recovery are best within 6 months, very remote after 2 years. On the whole if properly managed prognosis is fairly good.

*Treatment.*—1. Isolation, away from friends and relations (in an airy and well lighted room) and confined to bed for at least three months.

2. Attention to diet and bowels.

3. Prolonged hot baths and sedative drugs.

4. R. Serpentina.....an Indian drug has been recommended to me by Dr. K. C. Bose of Calcutta. I have no personal experience but the source of my information being reliable, I am putting down the details. Doses of 20-30 grains of the powder twice daily produce reduction of violent symptoms and of blood pressure with hypnotic effect. Within a week usually the patient's senses are restored, though he may show some mental aberration. Usually the treatment has be continued for 4—6 weeks (some times more) doses being then reduced gradually.



HYPOMANIA AND CIRCULAR INSANITY.

Hypomania is a sub-acute form of mania, where the symptoms are like acute mania though less marked. Imagination is over active and expression unrestrained. Patient puts forth clever schemes which are usually vitiated by some absurd impracticability. Drunkenness is common.

Circular insanity also called Cyclothymia is a form of periodic insanity in which there are periodic attacks of mania or melancholia with intervals of good health or mania followed by melancholia or vice versa. Cyclothymia has mania and melancholia together and it is now supposed that both are disorders of affection, characterised by defect of some of the higher functions of will, attention and judgment with predominance over those of lower level automatic associations. (E. D. Macnamara). Even in ordinary cases of acute mania there occur periods of depression, while agitative melancholia is an example of excitement. Summation of toxaemic states is a strong factor in the aetiology of this form of insanity. I had a case who manifested this form of insanity during the dark half month corresponding with the waning period of moon. She was supposed to be visited by some demon and was not treated. Symptoms are like those of mania or melancholia above described.

Although I have not treated a case of this form of insanity, still I think considering the aetiology Ringer Locke Solution injections should be tried.

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## HETEROCHROMIA IRIDES.*

BY

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Frequently one comes across normal persons, whose eyes show chromatic asymmetry; one being brown or greenish the other gray or blue. This difference in color of the two Irides is termed "Heterochromia Irides".

The distribution of the pigmentary changes varies. It may affect only one eye or both eyes. Bilateral Heterochromia Irides is very rare. Frequently the condition is unilateral and the contrast between the two eyes forms a striking picture. Usually one half of the iris or a sector is of a different colour than the remainder. Irregu-

* Specially contributed to the "Antiseptic."

larly distributed pigment sploches, may appear in one or both irides and are liable to be mistaken for foreign bodies by an inexperienced observer.

Heterochromia Irides may be congenital or acquired.

| Congenital | Acquired. |
|---|---|
| | (1) *Siderosis Bulbi.* Due to lodgement of a particle of Iron inside the eyeball. Metal gets oxidised to form Ferroso ferric oxide which goes to stain the tissues. |
| | (2) *Atrophy of Iris.* (a) Senile. (b) Iridocyclitis. (c) Sympathetic ophthalmitis. (d) Glaucoma. |
| | (3) *Organized exudates on the Iris.* |
| | (4) *Hæmmorrhage into the Anterior chamber.* |
| | (5) *Paralysis of the Sympathetic.* |
| | (6) *Post-traumatic.* (*Vogt.*) *This follows usually ten to twenty years after the injury.* |

Many varieties of appearances are met with. One Iris may be of a dark brown, greenish, gray or blue or an intermediate colour varying from yellow to dark brown and gray, as met with in acquired types. Only a sector in one iris may be darker in shade than the remainder or exactly one semicircular half of one iris may be affected. In acquired types of cases the distribution may be general, grayish yellow patches on a darker, or a lighter background.

Heterochromic eyes are subject to cataract and the lighter eye, usually blue ones are liable to develop a form of Cyclitis associated with Keratitis Precipitata, which is termed by Butler "Heterochromic Cyclitis".

Fuchs says that in some cases of Heterochromic Cyclitis the cause is Tuberculosis, but in others the etiology is not yet definitely known.

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# THE MODERN TECHNIC IN THE TREATMENT OF VENEREAL DISEASES*

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The two diseases that are usually classed as venereal are gonorrhoea and syphilis; a third one of less importance is soft sore and at present infective granuloma of the pudendum is also considered as due to sexual promiscuity. Of late in all countries the preventive aspect in relation to treatment is given very great importance. "Prevention is better than cure" is an old adage and it is said that in China in olden days family physicians were paid more fees while people were healthy rather than sick, for the Chinese had recognised the value of prophylaxis and it was the duty of the doctor to take proper precautions and advise persons as to the best way of leading a healthy life. In these modern times, particularly in Western countries the Governments through the public health departments are spending a lot of money in doing their best to eradicate all communciable diseases by preventive methods. In considering the treatment of contagious diseases, the modern tendency is to give the place of honour to prophylaxis. Syphilis and gonorrhoea are infectious diseases which would rapidly disappear from our midst if one could prevent promiscuity, or if one could ensure, when there is sexual contact between two persons one of whom is diseased, the carrying out by both certain precautionary measures at the time of or immediately after exposure to infection. The syphilitic virus as ordinarily introduced into man by sexual intercourse takes some hours to become generalised, for Metchnikoff found experimentally in apes that if the site of inoculation were treated *with calomel ointment, up to 18 hours after inoculation*, infection was prevented. In one of his books, "Medical Practitioners and Management of Venereal Diseases in Civil Community" Col. L. W. Harrison writes "if it were possible to take every man who had exposed himself and *properly* disinfect him, there would soon be an end to venereal disease. The gonococcus and Sp. pallida are the most delicate organisms in existence; they are planted on an exposed situation and easily liable to removal by urination or ordinary ablution. When natural agencies are assisted by the prompt application of antiseptics, it can easily be proved that the chances of infection may be reduced to an infinitesimal amount. In support of this I should like to quote some statistics. In one group, 2426

*Specially contributed to the "Antiseptic"

exposures to venereal infection were dealt with by disinfection within an hour and a quarter of exposure and were followed by only two infections". Physicians, repulsive though the task would be, must give full information about disinfectants and their uses—(the proceedure necessary to minimise the risk of acquiring disease)—to persons set upon sexual irregularities. The public must be told that the self-application of prophylactic measures are not good proof and hence there is a possible failure of precautionary measures with attendant dangers to the healthy life of not only the offender but also to the future generation. Every one who indulges in unsanctified unions must always be taught to be on the look out for symptoms which should take him straight to a doctor for treatment. The gross injustice done by persons of loose morality, to the community as a whole must be made quite clear, for no individual has the right to risk the health of the community. People must be taught to think of prostitution as a dirty bad habit and thoroughly bad form, and unsocial and cruel. Prostitution must be controlled by an act and infected prostitutes must be discovered and eliminated. The prevention of infection of prostitutes by discovering and treating infected man is also necessary. Morality must be raised. Efforts to secure the practical recognition of a high moral standard, which strengthened by the application of medical knowledge, adapted to the needs of the people, is sure to result in a rapid and lasting reduction in the incidence of venereal disease. In the west particularly in England, venereal clinics have been opened throughout the country where trained specialists are giving treatment gratis to all sufferers. The victims of these fell diseases are handled in a considerate manner and the public are advised to be sympathetic towards their fallen brothers. These patients must not be made to suffer shame in silence. Prudery must go. All must know the truth about venereal diseases. Nice men and women will speak freely about a relative having G.P.I or locomotor ataxia and not know it is a later stage of sex infection or knowing would die rather than mention. Sex hygiene must be openly discussed and only when public are enlightened, we may hope to eradicate these diseases. As long as there is a conspiracy to keep facts about these diseases as a sealed book to the public, the opening of any number of treatment centres will be of little avail in decreasing the incidence of these diseases. Realising that propoganda by means of health departments is a very important adjunct in the treatment of V.D, the public health department of our presidency have prepared a film with the kind cooperation of the General Pictures Corporation of Madras showing not only the dangers of V.D. but also the economic loss to the country as a whole, which follow in the wake of these diseases.



They are also issuing bulletins and during health week celebrations exhibit placards and posters clearly indicating to the public the dangers caused by these diseases. During the past two years a few lectures have been delivered through the broadcast station of Madras Corporation by the staff of the venereal clinic of the Madras General Hospital, for the education of the General public about these diseases and also to inform them that free treatment is given in G. H. At present, in all countries of the world, mass education in matters relating to sex is receiving very great attention and every right minded citizen wants to stamp out these diseases by leading a clean life. In Madras, the National Health Association of South India, Social Service League and the Madras Vigilance Association are doing their level best to educate the public and thanks to the agitation of some of these Associations the supression of Immoral Traffic Act popularly known as the Brothels Act was passed by our local Legislative Council and at present the act is applicable only to the City of Madras. All social workers hope that the act will be extended throughout the presidency during the course of a year or two. Before the advent of this Act, there was regulation and official toleration of professional prostitution and the brothels were regularly inspected by medical men. But it was found to be useless as a check on the spread of venereal diseases and at times it proved positively harmful, tending as they did to give official sanction to vicious traffic. In fine, by trying to elevate the morals of the public and by instructing them about the dangers of these diseases by means of pamphlets, posters, lectures and films, humanitarians hope for a decrease in the incidence of these scourges of humanity.

The treatment of gonorrhoea must be considered separately from that of syphilis. G. Urethritis in the male causes discharge from the urethra and scalding pain during micturition. A smear from the discharge is taken and is examined after staining with Leischman's stain for pus cells, Gonococci, Epithelial cells and Eosinopheles. In hyperacute stage no investigation or irrigation is done. Rest in bed with plenty of fluids to drink, mainly milk and barley water is necessary. No solids must be allowed for two or three days. Irrigation is contra-indicated in cases of urethral haemorrhage. In other cases irrigation at least twice a day for the first few days is quite essential. In all cases of acute anterior urethritis of gonococcal origin the acidity of the urine must be lessened by giving alkalies. The following alkaline diuretic is useful.

| | |
|---|---|
| Pot. Bromide | 3V |
| Pot. Citras | 3V |

| | |
|---|---|
| Tr. Hyoscyamus | ℥V |
| Inf. Buchu ad. | ℥VIII |

(Half an ounce in water 3 times a day after meals.)

The patient's bowel must be kept acting freely and he must be forbidden alcohol. Plenty of rest is essential. For the local treatment the following solutions can be used. Albargin 1·5%, Acraflavine 2%, Chloramine T. 1·5%, Mercuric Cynide 1%, Mercurochrome 2%. Picric acid 0·3%, Pot. Permanganate 1%. (Two drachms of solution are added to one pint of *hot water* at 100° F for actual use). Usually irrigation must be done daily for about two to three weeks. The doctor must bear in mind that the treatment of Gonorrhoea, which consists in the prescription of some urinary antiseptic and the recommendation of some particular type of Urethral syringe which the patient is taught to use cannot be said to be treatment at all. If the patient does not acquire a secondary infection in the process, he will most certainly acquire a sense of false security, and it is doubtful whether it is not better to have an untreated urethritis, which he knows to be so, than to have him lulled into the belief that he is cured. The effect of the daily irrigation, carried under the direct supervision of the doctor must be carefully noted. If the discharge persists and posterior urethritis, has supervened, causing frequent and painful micturition, irrigation with 2℥s of silver nitrate 1% with one pint of *cold water* is used. A smear from the Urethra after doing prostatic massage is taken and examined under the microscope for gonococcus. Daily instillation by means of a Urethral syringe of a 1·2000 solution of trypaflavine is found to be very effective for cases that are resistant to ordinary irrigation. A careful search of the urethra is made with the aid of a Urethrascope if it is available for the presence of narrowing, granulations or distented follicles. Granulations are touched with 2% silver nitrate solution. Constrictions when detected are treated by passing Lister's sounds. For the sounds Glycerine to which 1:500 Rivanol is added is used as lubricant. If there is evidence of prostatic enlargement, regular massage of the gland per rectum is combined with daily irrigation, and once a week Lister's sounds are passed till prostatic smear is free from Gonococcus. If infection has spread to the bladder causing cystitis, irrigation of the bladder with 1·2000 Pot. permanganate is done three times a day. The patient is given the following sedative and antiseptic mixture :—

| | | |
|---|---|---|
| Hexamine | gr. | 30 |
| Tr. Hyocyamus | | ℥1½ |
| Tr. Belladonna | m. | 15 |
| Inf. Buchu | ad. | ℥III. |

One ounce T.DS..



The patient is given complete rest. Plenty of fluids with barley water is administered. If the patient complains of very severe pain then quarter grain of Morphia is injected.

In cases of Epidydimitis following gonorrhoea, irrigation is stopped. One ounce of Grees extract of Belladonna is well mixed with two ounces of glycerine and this is applied locally. If there is very severe pain, 10 c.c. of a 20 % solution of Sodium Iodide is given intravenously. These cases also require a bland diet. Intravenous injection of 10 c.c. of a 10% solution of Calcium chloride is found to be very effective in reducing the inflammation caused by the gonococcus. Clinically this injection of calcium chloride is found to be good in cases of orchitis of gonococcal origin. Great care is necessary in giving this injection since sloughing will follow infiltration of tissues. This injection is given once a week and usually three injections suffice.

In cases of inflammation of the prepuce and glans, phimosis or paraphimosis may occur and then circumcision is done. If an inguinal bubo develops, non-specific protein shock therapy is found to be very useful. 10 c.c. of sterile milk is daily injected for about a week intramuscularly into the upper and outer quadrant of the thigh directly into the gluteal muscles. In some cases there is a remarkable cure: in others pus forms and bubo becomes soft to the touch. These can be aspirated and washed with dilute solution of Tr. Iodine. In a few cases where the bubo suppurates the following dressing is found to be very useful. Saturate white absorbent gauze with a 2% solution of picric acid in methylated spirit and apply.

In cases of complications arising from chronic Gonorrhoea like arthritis, synovitis, bursitis etc., the use of vaccines is found to give very good results. Injection of gonococcal vaccine can be given once a week and the following scheme of dosage is found to be very effective:—5 millions: 10 millions; 20 millions; 50 millions, 50 millions and 100 millions. Vaccines are useful when there is mucopurulant discharge. Usually in acute cases vaccines are practically of no value. In mild forms of Gonorrhoea where secondary infection is slight, the gross manifestations disappear early and the patient believes that the cure of the disease coincides with the disappearance of the discharge. He must be made to realize that the cessation of discharge is not the end and that the mucous membrane of the urethra may still be infected with the gonococcus. The safest test for declaring a man completely free from infection is to give him 500 million gonococcal vaccine as a provocative dose and then to make a microscopic examination of his discharge the next day. The method of irrigation being a tedious one, the patients are liable to stop after coming for a few days and hence they must be

instructed about the importance of a complete course of treatment to ensure freedom from disease. When treatment is done well, stricture of urethra as a sequela of Gonorrhoea will become rare. In infants ophthalmia neo-natorum infection occurs during birth from the maternal vagina. As a preventive, Crede's treatment is carried out. That is, the conjuctival sac is cleaned with 1:4000 perchloride of mercury immediately after birth. If infection has already occurred, the eye must be washed with boracic lotion and silver nitrate (5 grains to an ounce) drops must be instilled, this treatment being done for a period of at least three weeks.

Gonorrhoea in women can be regarded clinically as consisting of two well defined stages, the first, which is the more frequent and less serious being confirmed to the lower genital tract; and the second, which is fraught with gravest consequences being the stage in which the upper genital tract is invaded. In lower genital tract infections viz., Vulvitis, vaginitis, vulvovaginitis and cervicitis, the vagina is well irrigated by glass catheter with a solution of 1:2000 biniodide of mercury, after which it is thoroughly swabbed out with Tr. Iodine and absolute alcohol in equal parts. Then the following dusting powder is used :—

| | |
|---|---|
| Zinc Oxide | ℥ 1 |
| Bismuth subgallate | ℥ II |
| Light magcarb | ℥ II |
| and starch up to | ℥ 1 |

If there is erosion in the cervix it is painted with 2 % picric acid in alcohol. In cases of salpingo ovaritis Icthyol 20% in glycerine, as tempons in the lateral fonices. In cases where infection has spread to the upper genital tract and there is acute salpingitis complete rest is advised. If there is severe pelvic pain, warm fomentations are applied to the sides and in certain cases ¼ Gr.morphia is injected to lessen pain. In cases of chronic salpingitis, which generally is the commonest cause of pelvic pain in women, if physical signs indicate that the fallopian tubes are occluded and distended with pus, then operation of copherectomy (removal of tubes and ovaries) must be done.

Soft chancre, is due to a specific bacillus which was first described by Ducrey, and it causes an ulcer with clean cut edges and a sharp distinct outline. This must be diagnosed from a primary syphilitic sore before adequate treatment is done. In big venereal clinics where there are facilities for doing laboratory and microscopic work as aids to diagnosis, a smear, from the ulcer on a glass slide for doing dark ground illuminations to find Sp. Pallida is taken. If the ulcer is not clean as the first appearance of the patient then it is given a saline dressing and on the next day a smear for D. Go. is taken. Before definite diagnosis is done, sufficient quantity of sublimed sulphur is rubbed into affected parts. If from dark ground illumination and other characteristic clinical evidence like induration it is found to be a primary syphilitic sore, then the following dusting powder is used:— Equal parts of prepared calamine and calomal. If it is diagnosed as a soft sore, then only sublimed sulphur is applied locally and in addition 0·1 gramme of Urea Stibamine is given intravenously once a week. Occasionally a soft sore is found to take on a typically indurated syphilitic character and these cases require antisyphilitic treatment.



In cases of infective granuloma of the pudendum, whose etiology is unknown and which is considered as due to venereal infection, the spreading ulcers are daily cleaned and dressed with Eusol gauze. These ulcers heal very rapidly when Urea Stibamine injection is given and so patients are given injections of 0·1 Gramme U. S. intravenously, twice a week. From clinical experience it has been found that Urea Stibamine is a very effective curative in all cases where there are ulcers with unhealthy granulation tissue.

There can be little doubt that modern treatment of syphilis is much more effective than the old one which mainly relied on mercury and iodides, in eradicating the disease produced by S. P. Pallida. Now Arsenic and Bismuth are used extensively and iodide also is used as an aid for it is believed that iodides stimulate the tissues to clear away granulomatous tisaue. The figures 10, 8 and 3 represent approximately the potency of the anti-syphilitic triad Arsenic. Bismuth and Mercury. The specific value of Neosalvarsan treatment combined with Bismuth is that it rapidly causes the organisms of syphilis to disappear from the blood and secretions of the patient and thus renders him non-infect. After the discovery of Sp. Pallida by Schandinu and Haffmann in 1905, Ehrlich discovered "606" in 1909 and it is now sold as Salvarsan, Arsenobenzol, Arsenobillon, Kharsivan, Diarsenol and Arsphenamine, according to the country of origin and manufacturing firm. A large quantity of fluid has to be injected intravenously when Salvarsan is used and hence to obviate the inconvenience of administration which attaches to the use of "606", Ehrlich experimented to discover a compound having the same therapeutic properties but simpler to administer. The result was "914" which is now sold as Neosalvarasan, Novarsenobenzol, Novarsenobillon, Neokharsivan etc. More recently two preparations have been synthesised, which in many respects, are similar to "914". Their great advantage is that they can be injected subcutaneously with very little discomfort to the patient. They are known as sulpharsenol and "Kharsulphan" and these are readily soluble in water. Of all these

drugs Neosalvarsan is found to be very effective and hence is used in the venereal department of the Madras General Hospital. Caution should be exercised in giving N.S. when patients exhibit evidence of myocarditis, renal and hepatic disease, arteriosclerosis, aneurism, aortic, regurgitation, angina pectoris, syphilitic disease of larynx, diabetes, advanced disease of central nervous system, gumma of the brain, tendency to eczema, erythema, and urticaria. Pregnant patients and alcoholics also require careful treatment. Caution takes the form of lower individual doses and longer intervals between injections. Careful watch should be kept for signs of intolerance, which may be indicated by increasingly severe reactions following each injection, persistent nausea between injections, general malaise, loss of weight, erythema and jaundice. According to David Lees the combined administration of bismuth and arsenic is more potent than either drug alone and is especially indicated in cases where indications call for caution in using larger doses of arsenical preparations. In many cases the total dose of N.S. can be greatly reduced by giving more injections of bismuth preparations. In some cases certain toxic effects like vasomotor disturbances, urticaria and syncope occur during or immediately after injection of Arsenical preparations. These symptoms pass off after some time and in most cases these effects are very mild and in many cases these can be prevented by giving the injections very slowly. In certain persons after the first injection rigor, rise of temperature and headache may occur and these can be usually prevented by taking care that the patient has fasted at least two hours before injection. Albuminuria very rarely occurs and if it is found, then the injection of N.S is stopped and Myosalvarasan is injected. Various skin affections occur as an after effect of arsenical poisoning and these clear remarkably well when 10 c.c. of Sodium Thiosulphate 1 gr. in 10 c.c. solution is given intravenously. This thiosulphate injection is found to be very useful in aborting not only the toxic effect of arsenic but also of bismuth and mercury preparations. In some cases jaundice develops as a complication and then the injections must be completely stopped. The patient must must be put on a fluid diet with lot of milk and large doses of bismuth Subcarb and Sodibicarb must be administered with regulation of the bowels by paraffin. Just after the advent of Salvarsan products, large doses to the extent of even 0.9 grammes were being given and then some patients were found to develop cerebral symptoms and a few cases even ended fatally. Nowadays graduated doses are given at regular intervals and hence cerebral symptoms are of rare occurrence.

Blood for Wassarmann Reaction and Khan test is taken from all patients that attend the venereal clinic of a hospital and it was



usual to wait for the arrival of the result before anti-syphylitic treatment was started. At present, if clinical evidence indicates syphilis, the patient is straight away put on A.S. treatment. In the Madras General Hospital, Venereal department, patients with symptoms of syphilis are given at the very first attendance 0·3 gramme of N. S. and 1 c·c of B. W. & Co., Bismuth Cream straight away. The only precaution that is taken is to test their urine to see whether it is free from Albumin. The weight of the patient is also recorded before the injections are given. If Albumin is found in the urine then Myosalvarsan is administered intramuscularly. N. S. is dissolved in distilled water and is injected into the Median Basilic vein or some other vein which is found prominent near the bed of the elbow. The vein is made distended by fastening an elastic band round the upper arm and making the patient close and open his palm. The fluid is taken into a sterilised syringe with a fine needle and the point of the needle is inserted into the vein. A pull on the piston causes blood to flow back into the syringe when the needle is properly within the vein. The rubber band is released, the hand is kept open, and the piston pressed steadily and slowly home. The most important precaution to be taken is to give the injection very slowly and see that there is no infiltration of the surrounding skin. Myosalvarsan and bismuth cream are given intramuscularly and the site that is usually chosen is the upper and outer quadrant of the Gleuteal region. The point is above a line passing horizontally through the summit of the intergluteal fold and is also above and outside an oblique line drawn from the posterior superior illiac spine to the vertex of the great trochanter. Abscess formation and induration are caused in many cases through leakage and deposition of the injection material along the needle track, and this can be avoided by introducing the needle of the syringe to its full length by a single stroke; then the piston is pulled upwards slightly and if blood enters the syringe even in small quantity, the syringe must be completely withdrawn and reapplied. The ideal to the aimed at in intramuscular injection into the buttocks is to deposit the mass in the areolar tissue on the upper surface of the fascia forming the extension of the faseialta covering the gluteus maximus and not within the body of the muscle or between its fassiculi. When the needle is in proper position, the contents of the syringe are slowly injected with a firm and continuous pressure on the piston. The needle is swiftly withdrawn after injection. Massage is done over the site of injection just for flattering out the insoluble injection material in the Areolar tissue over the fascia.

The treatment of syphilis must be carried out for a period of full two years and Col. L.W. Harrison has published an ideal scheme

for carrying out routine treatment of adult syphilitic cases, and he has classified the cases for the purposes of regulating the dosage of drugs into five different varieties. (1) primary cases with negative Wassermann. (2) primary cases with positive WR. (3) cases of secondary syphilis. (4) Tertiary and latent cases of syphilis and finally (5) nerve cases (GPI & Tabes.) The dosage he has advocated has been found to be too much for the South Indians and in Madras General Hospital a syphilitic patient is started with an initial dose of N.S. 0·3 gramme and only very rarely the dosage during a course is increased to 0·6 gramme. All patients are given only one C.C. of bismuth cream every week. Weekly injections of N. S. and bismuth cream are given for twelve weeks and then the patient is given rest for four weeks. During the period of rest Iodides are given. Usually the following mixture is given.

| | | |
|---|---|---|
| Pot Iodide. | gr. 30. | ℥i, T. D, S after meals. |
| Sodi Biscarb. | ℥i | |
| Spts. Am, Aramaticus m. | 45 | |
| Inf. Gentian Co. ad | ℥iii | |

Total quantity of N. S. during one course must not exceed four grammes 12 C.C. of bismuth cream is given during every course. During the course of treatment, if the weight of the patient is found steady or increasing (i.e. not decreasing) and if there are no other symptoms of intolerance to arsenical preparations then the dosage of N.S. is increased from 0·3 gramme to 0·45 gramme for every injection, the increase being 0·05 gramme. Blood for Wassarmann is sent every third month during the 1st year of treatment. Three courses of injections are given for a patient. His blood is examined every six months during the second year. At the end of the 2nd year a provocative dose of N.S. 0·3 grammes must be given and the blood tested. If W.R. is negative, then the patient may be said to be cured.

In cases of advanced neurosyphilis, N. S. injections must not be given and so with intramuscular Bi. injections, Tryparsamide is given intravenously—8 weekly injections of 3 grammes of Tryparsamida in 10 C. C. of distilled water is given for a course. If fundus Oculi is diseased then tryparasamide is contra indicated. Three courses of injection are given with one month interval between courses. During the period of rest the following mixture containing Pot. Iodide is given :—

| | | |
|---|---|---|
| Liq. Hydrag Perchlor, | ℥ IV. | ℥ I. T. D. S after meals. |
| Pot. Iodide, | ℥ IV. | |
| Tr. Nux Vomica | ℥ II. | |
| Inf. Gentian Co., | ad ℥ III. | |



In these cases cerebro-spinal fluid is taken by the lumbar route and it is sent for examination (1) microscopically (i.e., a cell count is done) (2) biochemically (i.e. Lang's colloidal gold test is done,) and (3) for the usual Wassermann reaction. This testing is done at the end of each course of injections, just to get an idea of the progress that the patient usually makes. Generally these cases are very refractive to treatment, for one can be certain of a cure only in those cases where treatment was begun at an early stage.

In young children, treatment for congenital syphilis is carried on, by injections of minute doses of N. S. and Bismuth preparations. For babies below six months, the intramuscular route is preferred and Myosalvarsan at the rate of 0.005 gramme for each 3 lbs of body weight is given. An infant after the age of six months is given N. S. by the 1. V. route provided it has prominent veins. In addition these children are given 3 to 5 m. of Liq. Hydrarg Perchlor, 1 : 1000 orally 3 times a day after feed. In some children of marasmic condition injection of calomel cream on the skin of the abdomen is done. If there is condylomata lotio nigra is applied. For children above 5 years injections starting with 0.1 gramme of N. S. with ½ C. C. of Bismuth cream is given at weekly intervals, the total quantity of N. S. during one course being 1 gramme. After an interval of six weeks, the injection treatment is again continued and here also three courses of injections are done. At the end of each course of injection, blood is sent for Wassermann and in many cases the W. R. is found to be negative after the three courses of injections. To improve the general health of the child Syrupus Ferri Iodide with Cod Liver oil is given.

Before concluding I want to add that late and latent syphilis may affect any organ in the body and for the effective treatment of some of the late manifestations it is at times essential to have the opinion of and co-operation with doctors working in other departments of the hospital. For example, cardiovascular syphilis is very prevalent. Congenital syphilitic infections of the eye are numerous and in handling these and similar cases the advantages of consultation with the ophthalmologist and the physician, are many.

The examination and treatment of patients must be carried out as decently and expeditiously as possible, I wish to conclude with the following advice of Col. L. W. Harrison "I would add that the relation between the patient and the doctor should always be friendly and sympathetic. There is a great difference between medical officers in this respect. One gives the patient the impression of being considered a great nuisance and the other that his only ambition in

life is to see the patient restored to complete health, so that, if the patient were not to attend at the appointed time, the doctor would be broken-hearted. Success depends on the amount of sympathy displayed by the medical officer and the amount of interest which he takes in the work."

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## ON BILE AND THE BILIARY FUNCTIONS OF THE LIVER*

By

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(Continued from Page 928, *Antiseptic* August 1932).

The entry of bile into the intestine is adjusted to the activity of the alimentary canal. During periods of digestion, bile is expelled into the duodenum at frequent intervals; but in the fasting state, as Bruno has shown, little or no bile enters the bowel. The mechanism which is concerned in this adjustment of the bile flow may be briefly considered here.

The orifice of the common bile duct is guarded by a sphincter, the sphincter of Oddi. Some deny this is a true sphincter; but, according to Mann, "there is definite physiological evidence of a sphincter at the end of the common bile duct, which can withstand a small but measurable pressure in the biliary tract." This sphincter, when tonically contracted, offers definite resistance to the flow of bile into the duodenum. It is normally in a state of contraction, and bile does not get past it till it is relaxed, or till the resistance it offers is overcome. Potter and Mann have found that the average pressure which it can withstand is 120 mm. of water. Elman and McMaster have noted that the pressure in the common bile duct should be raised to between 100 and 120 mm. of bile in order to overcome the normal resistance put up by the sphincter of Oddi.

Whitaker maintains that the resistance to the outflow of bile is due to the tonus of that part of the duodenum in which the terminal portion of the common bile duct is situated, and not to the sphincter of Oddi, which is but so-called and not a true sphincter. Burget and Carlson also hold the same view. The majority of observers are, however, agreed that the sphincter of Oddi is a true sphincter.

The resistance put up by the sphincter of Oddi to the outflow of bile varies considerably with the state of activity of the alimentary tract. As Elman and McMaster have shown, during a prolonged fast the resistance of the sphincter rises greatly and requires a pressure of from 200 to 250 mm. (or even 300 mm.) of bile to overcome it; with the sight of food, due to a "psychic reflex", there is a transient lowering of the resistance, which is followed almost immediately by a period of increased resistance; and the commencement of intestinal digestion is marked by a gradual and fluctuating fall in the resistance, which is continued throughout the period of digestive activity.

* Specially contributed to the "Antiseptic."



Mellanby believes that the relaxation of the sphincter of Oddi is brought about by the peristaltic waves which pass down the duodenum from the pyloric sphincter. He says that "after eating, usually within 20 minutes, peristaltic waves of contraction pass down the intestine from the pyloric sphincter of the stomach"; that each wave of contraction is preceded by a "definite wave of relaxation"; and that "this wave of relaxation practically annuls the contraction of the sphincter around the entrance of the bile duct into the duodenum." Cole has found that the tonicity of the sphincter of Oddi is dependent on the presence of food in the stomach and duodenum, and on the hydrogen-ion concentration of the gastric and duodenal contents; he has noted spasms of the sphincter with distension of the stomach. As regards the hydrogen-ion concentration of the duodenal contents, we know that the introduction of acid, such as 0·4 per cent. hydrochloric acid, into the duodenum causes the relaxation of the sphincter and the expulsion of bile. But it should be noted that a high degree of acidity in the duodenum causes the sphincter to remain contracted.

From the foregoing account it is clear that the sphincter of Oddi plays an important part in regulating the flow of bile into the intestine.

The pressure at which the liver secretes bile is low; Hering and Simpson found it to average about 300 mm. of bile. This is, however, a much higher pressure than that required to overcome the resistance normally put up by the sphincter of Oddi; and if this level of pressure were allowed to persist in the biliary tract the entry of bile into the duodenum would be practically continuous. But this level of pressure is not allowed to persist in the biliary tract. There is a pressure-regulating mechanism in connection with the bile passages, and this mechanism reduces or increases the bile pressure in the common bile duct as occasion demands. This mechanism is constituted by the gall-bladder.

The gall-bladder reduces the pressure of bile in the bile passages by actively concentrating and storing the bile which is being secreted, and it increases the pressure by contracting upon and expelling its contents. While the former activity of the gall-bladder is admitted by the majority of observers, there is considerable

divergence of opinion regarding the ability of the viscus to contract and expel its contents. But present day opinion is in favour of the view that the gall-bladder does contract and expel the bile it contains.

The outflow of bile into the intestine is, therefore, under the control of two mechanisms—(1) a sphincteric mechanism at the terminal portion of the common bile duct (the sphincter of Oddi), and (2) a pressure-regulating mechanism in the course of the bile-flow (the gall-bladder). These two mechanisms are closely integrated. Meltzer has stated that the gall-bladder contracts when the sphincter of Oddi relaxes, and relaxes when the sphincter of Oddi contracts. He has postulated a law known as the "law of contrary innervation" of the gall-bladder and the sphincter of Oddi. How far the views of Meltzer are correct it is not possible to state with precision. But it would seem that the gall-bladder and the sphincter of Oddi behaved as if his law were true.

10

As has been stated in the preceding section, bile flows into the intestine during digestion; here it performs certain important functions.

(1) Bile is a digestive fluid, though digestive enzymes are absent from it. Its functions as a digestive fluid are as follows:—

(*a*) Bile augments the activity of pancreatic and of intestinal lipase.

(*b*) Schmidt says that it accelerates slightly the activity of pancreatic amylase.

(*c*) It destroys the activity of gastric juice in the duodenum, by helping to neutralize the acidity of the chyme, and, according to Ralfe and Fenwick, by actual destruction of the pepsin.

(*d*) It assists in the emulsification of fat.

(*e*) It facilitates the absorption of split fat from the intestine.

(*f*) Roger believes that it plays an important part in the inversion of certain sugars, by taking up from the intestinal mucosa preformed invertase.

(*g*) According to the same authority, it exercises a special action on albumoses and peptones.

(2) The recent observations of Mellanby, and of Ivy and Leuth, suggest that bile plays a part in stimulating the secretion of pancreatic juice.



(3) Macleod says that it is a "regulator of intestinal putrefaction"; he ascribes this to its laxative properties. Roger holds (*a*) that it prevents intestinal putrefaction by promoting the growth of certain bacteria which inhibit the growth of the putrefactive organisms, and (*b*) that it diminishes the toxicity of the products generated by the intestinal bacteria.

(4) Bile is the source of the normal colouring matter, stercobilin, of the faeces.

The bile which flows into the intestine is not entirely passed out in the faeces. The bile salts, for instance, are reabsorbed almost completely. The pigment also is reabsorbed, but only in part: it is absorbed as urobilin or stercobilin, into which it is transformed by the activity of intestinal bacteria. The reabsorbed bile salts stimulate the liver to form more bile. The function of the reabsorbed pigment in the body is not clearly understood.

11

Is the flow of bile into the duodenum necessary for life? Schwann in 1844, and Harley in 1863, answered this question in the affirmative. Harley found that animals with biliary fistulae, through which all the bile flowed out of the body, lost flesh, became emaciated and weak; that their hair had a tendency to fall off, their bowels to become irregular; that a great and an almost constant discharge of foul-smelling gases took place from their intestinal canal; and that, after a shorter or longer period, they died. He observed also that a diet, rich in carbohydrates, prolonged the life of these animals. But Mayo Robson in 1890, Paton and Balfour in 1891, and Ransom in 1896, from observations on patients with biliary fistulae, concluded that the absence of bile from the bowels was not incompatible with health. Paton and Balfour have stated that "health can be perfectly maintained when the bile is directed to the outside of the body." However, Hooper and Whipple have recently confirmed the observations of Harley. They have shown that bile fistula dogs usually die within two months with acute intestinal disturbances if kept on an ordinary diet of "kitchen scraps"; that they may live in good condition for from eight to ten months if fed on a special diet of milk, cooked potatoes, boiled rice, and bread; that "abnormal pigment disturbances and true purpura with fatal haemorrhage may develop in such dogs"; and that the addition of cooked liver to their diet usually improves their condition and prolongs the period of health. Wisner and Whipple have described in such dogs a condition of bony abnormalities: the bones become unduly thin and fragile, and the bony frame-work is

depleted of inorganic salts. It is likely that this condition is caused in part at least by the loss of calcium in the bile.

The amount of bile that need flow into the duodenum for the maintenance of health is but small. Hooper and Whipple have found that bile fistula dogs with tiny fistulous tracts connecting with the duodenum remain in perfect condition for very long periods. Whipple remarks that the amount of bile which flows into the duodenum through such fistulous tracts is but one-tenth or one-twentieth of that flowing out of the (external) biliary fistula.

12

As a rule, the flow of bile into the intestine stops only when there is gross obstruction to the passage of bile along the large extra-hepatic bile ducts. Rolleston has grouped the causes of such obstruction as follows:—

(1) Where the obstruction is inside the lumen of the bile ducts: gall-stones, parasites (round-worms and liver flukes), portions of ruptured hydatid cyst, and inspissated mucus.

(2) Where the obstruction depends on changes originating in the walls of the larger bile ducts:

i. Inflammatory swelling of the mucous membrane of the common bile duct, either inside the biliary papilla or in the lower part of the duct.
ii. Infective and suppurative forms of cholangitis.
iii. Simple stricture of the large bile ducts, congenital or acquired.
iv. Primary carcinoma of the ducts.
v. Spasm of the muscular coats of the ducts.

(3) Where obstruction is produced by processes arising outside the larger ducts:

i. Intrahepatic tumours: the intrahepatic bile ducts may be pressed upon and occluded by cancer, hydatid cyst, or gumma of the liver; as the process involves only certain areas of the organ, the flow of bile into the duodenum does not stop; but a cancer mass may project from the liver into the portal fissure and press upon both hepatic ducts, the common hepatic duct, or the common bile duct, and stop the bile flow.
ii. Enlarged glands in the portal fissure.
iii. Lesions of the stomach: cancer, ulcer, adhesions.
iv. Lesions of the duodenum: ulcer, adhesions, cancer.
v. Aneurysm of the hepatic artery.
vi. Lesions of the pancreas: cancer of the head of the pancreas, pancreative cysts, chronic pancreatitis, or pancreatic calculi.

The flow of bile into the duodenum may stop also in cases where the liver is extensively damaged by toxic or infective agents. Even in these cases, the cessation of the flow seems to be due to actual obstruction of the minute bile passages, and not to suppression of bile.



13

The disorders which arise in human beings when bile is excluded from the intestines are briefly as follows:—

1. Deficient digestion and absorption of fats.
2. Loss of weight and strength.
3. Distaste for fatty foods.
4. Defective evacuation of the bowels.
5. Excessive intestinal putrefaction,
6. Bulky, clay-coloured, foul-smelling, fatty stools.

*Steatorrhoea*: The fæces are bulky because of the large amount of fat they contain. The amount of fat lost in the fæces may be as much as 55, or even 78, per cent. of that ingested, instead of the normal 7 or 11 per cent.; and it may constitute between 11 and 13 per cent. by weight of the moist fæces.

Fat is lost mostly in the form of fatty acids and soaps. Fatty acid crystals can be detected in the faeces in large amounts. The offensive smell of the stools is due to these fatty acids. As Leathes and Raper have pointed out, neutral fat also is lost in the faeces in greater amounts than normal.

The clay colour of the fæces is partly due to the excessive fat content, and partly to the absence of stercobilin.

7. Osteoporosis.

"The fatty acids carry out with them in the fæces a large amount of calcium, partly withdrawn from the blood, which may account in part for the osteoporosis observed at times both in animals and man when bile is prevented from entering the bowel" (Wells).

8. Presence of bile in the blood.

*Steatorrhoea* may arise not only from failure of bile to reach the bowels, but also from certain other causes: thus, it may occur—

(1) in pancreatic insufficiency:

In this condition, pancreatic juice fails to reach the intestine: because of this, fat-splitting is deficient: consequently, neutral (or unsplit) fat is passed in the stools in excess.

(2) in certain bowel disorders:

Cammidge says, "Intestinal disorders associated with excessive peristalsis and diarrhoea increase the total fat in the stools....."

When the absorptive power of the intestinal mucosa is impaired, the amount of fat lost in the stools is much greater than normal.

In sprue, and in "coeliac disease," steatorrhoea is a prominent symptom.

(3) as an "inborn error of metabolism":

In the rare familial condition, known as "congenital steatorrhoea," the stools from birth are fatty.

(4) in health:

Fat may be passed in large amounts in the stools when the amount ingested is excessive.

The following table, compiled from various sources, gives the total amount, and the partition, of fat in the fæces, in health and in certain diseases with fatty stools :—

TABLE III.

| CONDITION. | TOTAL FAT IN FAECES. Per cent. by Weight of | | PARTITION OF FAECAL FAT. Percentage as | |
|---|---|---|---|---|
| | Ingested Fat | Dry Faeces | Split Fat | Unsplit Fat |
| 1. Healthy Infants ... | 4·9 | 34·5 | 79·8 | 20·2 |
| 2. Healthy Children .. | 6·3 | 30·7 | 86·0 | 14·0 |
| 3. Healthy Adults ... | 7-11 | 15-25 | 70-80 | 20-30 |
| 4. Healthy Adults ... | ... | 21·0 | 95·2 | 4·8 |
| 5. Healthy Men ... | ... | 17·4 | 58·6 | 41·4 |
| 6. Healthy Women ... | ... | 17·7 | 57·1 | 42·9 |
| 7. Gastro-enteritis in Infants .. | ... | 47·5 | 80·5 | 19·5 |
| 8. Diarrhoea in Children. | 25·7 | 35·1 | 46·4 | 53·6 |
| 9. Coeliac Disease ... | 43·3 | 46·8 | 78·6 | 22·4 |
| 10. Congenital steatorrhoea ... | 24·0 | 79·4 | 38·6 | 61·4 |
| 11. Chronic Intestinal catarrh .. | ... | 29·0 | 69·3 | 30·7 |
| 12. Sprue ... | ... | 51·4 | 78·0 | 22·0 |
| 13. STONE IN COMMON BILE DUCT... | ... | 50·9 | 88·1 | 11·9 |
| 14. STONE IN COMMON BILE DUCT with Pancreatic Disease ... | ... | 57·1 | 92·5 | 7·5 |
| 15. ABSENCE OF BILE FROM BOWELS ... | 55-78 | 50-65 | 80-90 | 10-20 |
| 16. CANCER OF PANCREAS With Obstruction of Common Bile Duct ... | ... | 64·6 | 95·2 | 4·8 |
| 17. CHRONIC PANCREATITIS ... | ... | 26·5 | 80·8 | 19·2 |
| 18. PANCREATIC DISEASE ... | 52·4 | ... | 65·5 | 34·5 |

Cheadle ascribed the intestinal disorder of children, known as "coeliac disease", to "acholia", or absence of bile from the bowels. In this condition, absorption of fat does not proceed normally. The

# Cases & Comments.

## A CASE OF CAESARIAN TOTAL HYSTERECTOMY.

BY

CAPTAIN M. R. W. HART, M.B.E., I.M.D., M.R.C.S. (ENG)., L.R.C.P. (LOND).,

*Professor of Obstetrics and Gynaecological Surgeon. H. E. H. the Nizam's Osmania Medical College and Hospital, Hyderabad-Deccan.*

A Mahomedan woman, 4th para, was admitted into the Maternity Section of the Osmania Hospital at 12 Noon on the 4th of August 1931, complaining of severe pain in the abdomen for the past 6 hours.

*On Examination* :—The Uterus corresponded to full term, was soft and not acting, head presenting and moveable above brim, foetal-heart audible on the left side between umbilicus and the anterior superior Iliac spine, a swelling the size of an orange was distinctly palpable and very tender to touch, pain was severe. Diagnosis of twisted ovarian pedicle or a long stalked sub-serous fibroid was made. A large soap and water enema was given with a good result, the pain subsided to a slight extent-at 4 p.m. Ol. Ricine 1 oz, was given and a diet of glucose water and albumen water ordered. Patient kept in Fowler's position during the night, pain was more severe-Morphia ¼ gr. with Atropine 1/150 gr. given Hypodermically; this had little or no effect. At 7 a.m. the day following it was decided to open the abdomen under $CHCl_3$. On opening the abdomen in the mid-line about 5 ounces of rice water coloured fluid escaped. The uterus was gently delivered out of the wound and its place taken by a large towel wrung out of warm saline which kept the intestines out of the way, the edges of the wound protected with saline gauze. The growth proved to be a gangrenous stalked sub-serous fibroid-the pedicle was ligatured and tumour removed. The fundus of Uterus was found studded with multiple fibroids varying in size to that of a walnut.

The uterus was then opened and a living male child weighing 6½ Lbs was delivered. The Placenta was adherent and while separating it 4 interstitial fibroids, the size of the palm of an average hand were detected two at the fundus and two about the area of the lower uterine segment. Instead of wasting time in peeling off the placenta it was decided to remove the uterus and this was accordingly done. On attempting to suture the stump, it was found that the whole



cervix was occupied by a fibroid which practically filled the pelvic cavity and this necessitated the whole cervix being removed. The Vaginal flaps were then sewn together and the area peritonised. Two pints of normal saline left in the abdomen and closed with through and through silk worm gut sutures.

*Progress.*—During the 24 hours following the operation, 4 pints of saline were given submammary-and glucose and water *ad lib* by mouth-Pulse improved. On the 5th, 6th and 7th days she ran a temperature of 103° and was treated with Polivalent Anti Streptococcal Serum 20 C.C. and quinine byhydrochlore 10 Gr. intra-muscular for 3 days-no malarial parasites found in the blood-Temperature normal on the 8th day. Beyond this, recovery was uneventful. Sutures removed on the 10th day. Union by first intention. Patient was discharged on 5-9-31 i.e. 31 days after delivery. On Vaginal examination before discharge, the pelvis was found free.

There is an axiom that a woman who grows fibroids rarely grows fœtuses. This patient had grown both simultaneously. It is likely the fibroids existed before the birth of the 3rd child 4 years ago or even earlier. It is quite possible for a woman with a fibroid tumour to bear not only one child but several; these fibroids are usually sub-serous or at the fundus if sub-mucous. In this case the fibroids were of all three varieties, i.e. sub-serous at the fundus, interstetial in the body and sub-mucous in the cervix: the latter practically blocking the pelvis and yet not offering hindrance to conception.

It is interesting to note how one operation lead to another. Under normal conditions all that a 4th para with a vertex presentation and previous labours natural at term, would need, is helping with forceps in case of relative uterine inertia. It was the acute pain and tenderness and swelling that lead to the abdomen being opened; the presence of multiple sub-serous fibroids at the fundus made one suspicious of interstetial growths which would have certainly stood in the way of perfect retraction. This induced one to do a Caesarian, the existence of four large interstetial growths lead to removal of the uterus and finally the presence of the large sub-mucous cervical fibroid gave one no choice but to do a total hysterectomy.

There was no history of menorrhagia nor metrorrhagia between the pregnancies. The eldest child is now 17 years of age.

## A CASE OF RAT BITE FEVER.

BY

CAPT. S. K. CHAUDHURI.

*Chief Medical Officer, Benares State.*

N. K. Hindu male. aged 25 years was admitted on August 22-'32 to the Lovett Hospital, Ramnagar, Benares State, with fever and a circular, sloughing ulcer, nearly two inches in diameter, at the lower end of left upper arm internally. The duration prior to admission was twelve days.

He said he had been bitten by a rat of moderate size while asleep at night. The pain was so severe that he woke up with start, he saw the rat jump off his arm and run away. The bite was followed by bleeding to stop which some home remedies were applied. Soon after the axillary glands becams inflamed and they subsided by the fifth day. The part bitten became indurated and painful and was soon covered over with a considerable amount of slough with a tendency to spread. The fever began, according to him, on the third day of the bite.

On admission to hospital on the twelfth day his blood was examined and nothing but malarial parasites (benign tertian) were found, He ran an irregular temperature on which quinine and cinchona, the latter is used as a routine measure for malaria in this hospital, had no effect.

On the third day of admission i.e. August 30. 1932, Theosarmine 0.3 gram was injected intravenously. Twenty-four hours after the injection the temperature came down to the normal which has not risen since. The ulcer was treated with eusol and copper sulphate lotion.

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## FRIBROLYSIN TREATMENT IN CORNEAL OPACITIES.

BY

V. G. PANIKER. L.S.M.F. *Erode.*

Within the last three months I had occasions to treat three cases of opacities of cornea of varying degrees. Out of these one was a long standing case developed after ulceration of cornea during an attack of small-pox some seven years back according to the history of the patient, and the other two were of recent origin, about one year in duration, due to also attacks of small pox. The opacity in the latter two cases was very thick having lot of scar tissues deposited, leaving the subjects entirely blind. There was only slight perception of light. In all these cases the treatment adopted was the same and



results obtained were extremely satisfactory if not marvellous and as such I think it will be of some interest to other readers who care to treat eye cases.

*Case No. 1.* A boy named, G, the son of a railway servant was brought to me some two months back for eye treatment. complaining of dim vision and on examination, I found that his left eye was in sound condition having normal vision both distant and near, but his right eye was defective in its visual function to such an extent that he could not even count fingers at 12 inches distance. It was due to no other abnormal condition in his eye except a thin layer of opacity including the entire pupilary area. The history is that the boy had an attack of smallpox some seven years back and had some eye trouble then. Since then his eye was like this. As some portions of the corneal margins were clear, and as the defect was a long standing one I thought first that an iredectomy through the clear portion of corneal margins would give better result than trying with absorbent local applications and injections and advised likewise the father of the patient. But he did not like the idea of operation and requested me to try with medicines first and if not effective operation in the end. I therefore began to treat him on the following lines and found that the opacity began to fade even within a few days after the beginning of treatment and now, that is, about two months after, the cornea is almost clear and the patient is not only able to count fingers at moderate distance but also to read bold type letters at about two feet distance and I hope he will recover his normal vision by continuation of the same treatment for about a month more or so.

*Treatment adopted*—Merck's Fibrolysin ophthalmic lymph, few drops of which and dionin solution, one or two drops, were applied in the eye every day morning and evening and an ointment containing atropin, hydrag oxide flava and dionin in usual strengths applied in the eye every day twice once in the noon and once at bed time followed by a bandage. I also used to give subconjunctival saline injections every fifth or sixth day (one injection after the reaction of the previous injection is completely subsided). Internally I advised the patient to take one teaspoonful of syrupus ferri iodi and two teaspoonful of Waterbury' compoud, cod liver oil in the way of medicine twice daily after food and also advised him to have plenty of oranges and such other vitamins as much as he can afford to have.

*Cases No. 2 & 3.*—Both girls one aged about 6, and the other about 10, were placed under my treatment for complete blindness due two thick corneal opacities, caused within a period of one year due to eye complications during attacks of smallpox last year. In these cases both the eyes were affected and the eyes were also red

due to inflamatory irritation. The whole cornea was thick with fibrous tissue and was entirely opaque and so the vision was nil except little perception of light. I naturally took up the cases with some reluctance andt old them that I would do my best but could not assure them of curing the cases. The treatment adopted in these cases was the same as in the first case with the only exception that argyrol solution was also being put in the eyes two or three times daily for redness and inflammation. In these cases also the results obtained by the above line of treatment were extremely satisfactory and far beyond my expectations. Within two weeks all the inflammation subsided and the thickness of the opacity began to get reduced day after day and the vision also began to get improved gradually. It is now about three months since I began to treat these cases and the improvement made so far is so very encouraging that I think that both the patients will be more or less completely cured within another month or so.

*Points to be noted.* Many a time previously, I have treated corneal opacities of similar nature with all other methods as aforesaid except Fibrolysin and at all times then the results were not so good as at present. So I can confidently assert now that Fibrolysin local application is a very useful medicament in treating corneal opacities tither of recent origin or of a long standing nature.

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## TWO INTERESTING CASES OF DYSMENORRHOEA

BY

PHANIBUSAN MUKERJEE, L.M.P.,

*Chakmehsi, P. O. Janardanpur Darbhanga.*

My apology in writing these notes is to bring forward to the notice of the readers the usefulness of Liquor Sedans in cases of dysmenorrhœa as will be apparent from the history of the two cases cited below.

*Case No. I.* In the year 1920, a Hindu mali or gardener consulted me for the treatment of his wife, aged about 25, who was suffering for the last few years from periodical attacks of painful menstruation. He was moreover afraid of her having been sterile as she did not conceive at all up to this age.

In order to dispose of a phial of Liquor Sedans (P. D. & Co.) which I had with me, I gave same to him for administering to his wife. As per directions on the phial, I advised to give it to her in teaspoonful doses three times a day.

After sometime the gardener came to me complaining that his wife was not menstruating for the last 3 months. On this I told him



that his wife was most probably pregnant and asked him to wait for sometime more i.e., up to the 5th or 6th month, when the diagnosis of pregnancy will be confirmed by the movements of the child in her abdomen. The gardener waited accordingly, my prediction proved true and his wife delivered a healthy child in due course of time.

The medicine not only cured her of the attacks of painful menstruation from which she was suffering so long but removing this cause of her sterility made her fertile or conceive for the first time.

*Case No. 2.* In the year 1930, I attended an adult Hindu female, aged about 30, who was suffering from severe attacks of pain in her Pelvis due to Dysmenorrhora for the last 10 days. She used to get low fever in the afternoon.

As she was constipated for the last 5 days, I relieved her bowels by giving a Soap water Enema. For the agonising pain, I gave her an injection of morphia and prescribed a mixture containing Ergot, Bromides and Magnesium Sulphate.

As the pain returned after the action of morphia was over, I repeated the injection on the 2nd day and added Tincture of Opium to the mixture, but, unfortunately, both opium and morphine failed to relieve the pain.

To try the effect of Liquor Sedans in this case, I requested her relatives to buy one phial and advised to give her in tea spoonful doses four times a day. They acted accordingly and the medicine produced marvellous effects by curing the pain permanently, from the very day she commenced using the drug. A year had elapsed since then and she is doing well. The readers may try this effective medicine in their cases of dysmenorrhœa and publish the results in the columns of this journal.

## TREATMENT OF PNEUMONIA

BY

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*Assistant Surgeon, I/C Civil Hospital, Sheikhupura.*

I have read with interest the article on the treatment of Pneumonia by Dr. James Burnet (Edin) in your April number. I am very much impressed by the simplicity of the line of treatment, and especially the importance of unloading of bowels. This reminds me of a case of Pneumonia attended by me 10 years ago, while in charge of a canal dispensary at Rasul, Punjab. I hope it will be of interest to your readers.

Late one afternoon, I was called to see a case of advanced Tuberculosis of Intestines in a village 10 miles away. The case was hopeless, but I prescribed some medicine for their satisfaction. I was asked to see another case by the way, since I happened to be there. I found a man, aged 30, blue and cynosed, with very rapid breathing, in extremely toxaemic and moribund condition, and 7th day of fever a typical case of Lober Pneumonia. Bowels had not moved for 7 days, and tongue was thickly coated. I prescribed full dose of calomel and pneumonia mixture, and asked a man to run to my dispensary, and start the medicines at once. In a hurry the man forgot to take a bottle brought back the powder alone and gave it at night and no other medicine.

The next morning, I went to see the original case of T. B., He had died. But this man with pneumonia had filled whole of his house with stools. Temperature was normal; toxaemia and cynosis had gone; and he was a normal man cured with one dose of calomel.

N.B. I myself have been very lucky in the treatment of pneumonias, and quite agree with Doctor Burnet's views. My own opinion is that a case of pneumonia, coming into the hands of a sensible doctor, in time, must not die. But I beg to disagree with the learned doctor in the indiscriminate use of brandy. In my humble opinion it should be reserved for the late stage of resolution. If given early it has a tendency to dry up sputum, make expectorations difficult, and fail in its duty at the time of crisis, when it is most needed. As a cardiac stimulant, and for keeping temperature low, I have found 4-8 hourly hypodermic injections of camphor gr. 3 and aether M. in 1 c. c. of olive oil very useful.

1881. He was transferred thence to Quetta, Burma, The Andamans, Bangalore and other places, as was the wont with the Government generally in this country. In 1892. he began to investigate on the causation of Malaria which till then was supposed to originate in marshy tracts and be spread through foul air. In 1895, he was awarded Parke's Gold Medal and in the same year he undertook the experimental verification of the Mosquito theory of Malaria. This theory was instilled in the mind of Ross, by Sir Patric Manson, the father of Tropical Medicine. Professor D. F. Fraser-Harris has most graphically described this epoch-making discovery thus:—

> " Ross's discovery was no mere happy accident while he was searching for something else. Sir Patrick Manson, father of Tropical Medicine had suggested to Ross that Mosquitoes carried the parasite of Malaria, because he had found in 1877 in China that Mosquitoes carried the Microscope worm (Filaria) which was the cause of Elephantiasis. This most fruitful suggestion Ross at once determined to follow up. It was a highly probable one, for the insects are the curse of the Tropics. At this time (May 1895), Ross was only a Captain in the Indian Medical Service without a laboratory without assistants, without Medical Books of reference and without a grant in-aid of research! A less resolute man would never have surmounted these obstacles. Manson had not indicated in what part of the mosquito the minute parasite was to be found. So Ross had to dissect the bodies of thousands of insects before he discovered what he sought for, an object which "is to a mosquite what half a crown is to a hippopotamus".

The trying conditions under which he conducted his experiments in a small, dark, hot room in his hospital have been so vividly described by Sir Ronald Ross himself thus:—"I did not allow the punka to be used because it flew about the dissected mosquitoes—the result was that swarms of flies and of 'eye flies' tormented me at their pleasure while an occasional Stegomyia revenged herself on me for the death of her friends. The screws of my microscope were rusted with sweat from my forehead and hands and its last remaining eye piece was cracked".

Nor was this all. His friends in the mess room often used to cut jokes with him. 'Captain Ross and his everlasting mosquitoes' first meant as a joke. were held as a regular nuisance thereafter. When his friends were engaged in making merry and playing polo, during off-hours, Ronald Ross was sweating himself to death trying to get a



glimpse of a 'beastly bug' that no one except himself supposed existed. Despite official apathy, obstruction and persecution, Sir Ronald pushed on laboriously with his experiments, till he achieved his end. It was at Secunderabad on August 20, 1897 that he succeeded in discovering the Malarial parasite in the stomach of the anopheles Mosquito. Another experiment conducted a month later, confirmed his discovery beyond a shadow of doubt. But the very next day he was suddenly ordered off to Rajputana on regimental duty and all remonstrances and entreaties having proved abortive, he left the place in disgust. In 1898, Surgeon Major Ross was transferred to the Presidency General Hospital at Calcutta, where his efforts were crowned with complete success. The Ross memorial gate at the Presidency General Hospital bears the following inscription:—

> "In the small laboratory 70 yards to the South east of this gate, Surgeon Major Ronald Ross, in 1898, discoverd the manner in which Malaria is conveyed by Mosquitoes".

Sir Ronald Ross ranks with Harvey, Jenner, Simpson, Pasteur and Lister as one of the greatest figures in scientific medicine. After retirement, from I.M.S., in 1899, he took a journey to West Africa for the study of Malaria-bearing Mosquitoes and devoted himself entirely thereafter to research and to teaching. He joined the Liverpool School of Tropical Medicine as Lecturer and subsequently became professor of Tropical Medicine at Liverpool University. In 1913, he was appointed Physician for Tropical Diseases at King's College London, and later Director-in charge of the Ross Institute and Hospital for Tropical Diseases. During the Great War, Sir Ronald was appointed as R. A. M. C. and became War Officer in Malaria. After the War he was consultant in Malaria for the Ministry of Pensions.

Sir Ronald Ross, cleared Ismalia of Malaria. He visited Panama, Greece, Mauritius, Bombay, Spain. Cyprus, France, Macedonia Sierra Leone, Ceylon, Assam, Malaya and other places. In 1902, he received the Nobel prize for Medicine. In 1911, he received a K.C.B. In 1918 a K.C.M.G. He also received the Royal Medal of the Royal Society of which he was a fellow from 1901. He was the Editor of 'Science Progress". His publications consist of "Prevention of Malaria, Philosophies, Psychologies, the Revels of Orsera (a Romance) and "Memoirs", "the Child of Ocean", "In Exile" as well as mathematical and medical works.

Like other great scientists and men-of-letters who flourished during 16th, 17th and 18th centuries, Sir Ronald Ross, it must be admitted to the shame of the civilized world of 20th century, suffered in his later days from want and penury. In order to provide money

for the benefit of his children. he had to sell away his historic collections of documents relating to Malaria to Lady Houston for £2000/- who afterwards presented it to the British Museum. He had to draw on his capital including the Nobel Prize for family needs. Wisdom had at last dawned on the British public who raised a memorial fund for the selfless sacrifice Sir Ronald Ross has made for the benefit of humanity and for having made, as His Royal Highness the Prince of Wales had put it in opening the Ross Institute, "a third of the world habitable", and we are glad to note that the Government of India had also subscribed £2000/- towards the said fund. It is understood that the Fund came up to £,15,000.

Before we close, it would be interesting to recall his last message to the public contained in an article entitled "Is research worth while?" and published in the paper "New Health" just a few days before his death, which Reuter has communicated by Air Mail in these words:—

"Sir Ronald Ross's answer to the question asked in the title of the article is, for the human race, nothing is more worthwhile than the successful investigation but for the individual who attempted it nothing is worthwhile". He instances Newton who was given 'an ordinary post generally held by ordinary men and Isacc Barrow who established the calculus but received nothing but a Professorship in Divinity. He adds "Perhaps Medical advances are most shocking examples because by some silly custom, doctors are not supposed to make profit from inventions, a kind of trade union tyranny."

Sir Ronald Ross says "he had long felt that subsidized inventions seldom lead to important discovery, while independent workers were more likely to be sincere in that they have to provide their own expenses. He advocates payment in advance."

We hope this parting message of this genius, who had toiled for humanity and had made this utterance in anguish and despair and out of the stress of poverty at a time when he was disabled both by advanced age and physical troubles due to a paralytic attack to earn his living, would not be lost on the Governments and the peoples of this world and they would take such steps at least in the future to provide sufficient funds for research workers and place them always above want.

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# Gleanings from Medical Press

## SURGERY.

**Seminal Vesicles; Newer Instrumental Methods in Diagnosis and Therapeutic Management.**—Joseph F. McCarthy and J. Sydney Ritter, New York (Journal A. M. A., Feb. 27, 1932), state that their objective has been, by means of improved and rational technical procedure, to render the seminal vesicles accessible to the same kind of study as, for example, is now the renal pelvis: in other words, to bring it within the spotlight—the searching scrutiny of orderly scientific investigation. To facilitate the catheterization of the ejaculatory duct, it is essential that an instrument be used which will direct the catheter to take the same relative course that the ejaculatory duct takes through the verumontanum and prostate gland. For this purpose the McCarty ejaculatory duct catheter carrier, with spring wheel deflector, is necessary. It is composed of three parts, the sheath, obturator, panendoscopic telescope and the ejaculatory duct catheter carrier. The sheaths are a number 24 F. and a number 26 F. whose circumference is more circular than the ordinary panendoscopic sheath. The telescope is slightly modified to admit this carrier, a new departure in urology, for with its use catheterization of the ejaculatory ducts and therapy to the seminal vesicles in indicated cases is rendered a simple procedure. Catheterization of the ejaculatory ducts together with the collection of the uncontaminated seminal secretion, generally speaking, should be reserved for refractory cases of seminal vsiculitis not responding to the usual therapeutic measures. The specific indications are as follows: (1) Chronic arthritis—when other foci have been eliminated and the seminal vesicles are suspected: (2) persistent chronic posteior urethritis with evidence of verumontanitis and microscopic evidence of pathologic changes in the expressed secretion: (3) vague indefinite backaches—undetermined by the usual measures: (4) impotentia; (5) sterility, and (6) sexual asthenia with large palpable vesicles to determine patency of the ejaculatory ducts.—*Journal of the Oklahama State Med. Association.*

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**Gangrene of the male genetalia.**—J. M. Macnish, (Urol. and Cut. Rev., June 1932, p. 375) who records three illustrative cases—a man, aged 41, who died, and in two men, aged 51 and 46, who recovered, states that gangrene of the male genitalia is rather uncommon. Since 1915 only thirty such cases have occurred at the St. Louis hospital, and of these only three were spontaneous gangrene. The onset is sudden, with chill, fever

pallor, marked prostration, nausea vomiting and delerium. After a pregangrene period of from twenty-four to forty-eight hours the scrotum increases in size and becomes tense, reddened, and painful. The onest of gangrene is indicated by moist desquamation and the odour of mortification. The gangrene may be due to gas producing or non-gas producing organisms. The condition must be distinguished from orchitis, hydrocele, and torsion of the testes. The prognosis should be gaurded, since the morbidity among 206 cases collected by Gibson was 26.7 percent. Treatment should consist in multiple incisions and widespread debridement of the necrotic tissue, followed by antiseptic irrigations. [*Through B.M.J. July 16, 1932.*]

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**Intracranial Tumours.**—Since the pioneer work of McEwen and Horsely steady progrees in intracranial surgery has taken place. In 1929, in a statistical study, Dr. Louise Eisenhardt gave evidence of this progress by publishing some encouraging figures of the operative mortality in a series of intra-cranial tumours at the Johns Hopkins and Peter Brigham Hospitals. Between 1922 and 1929, she reported a progressive tendency to improvement, notwithstanding the fact that each year more difficult and more radical operations were being performed than were previously undertaken. In a recent paper, Pro. Harvey Cushing gives a further review of these figures, and continues the sequence to the middle of 1931. These data are reproduced in the main in his new monograph on the subject. The later figures reveal a still further reduction in mortality. In the year 1922-23 the operative mortality for all verified tumours, including new and old cases, is reported as 16.9 per cent., and this figure has fallen to 11.0 per cent. in 1926-27 and again to 6.8 per cent, in 1930-31. This figure is likely to be maintained. That this low rate is not due to a lax definition of post-operative death seems however, quite certain; rather the standard tends to be too severe. For every death in the hospital (the average hospital sojourn in the last 100 cases was 39 days), following an operation no matter how long the interval or what the cause, is recorded as a post operative fatality. So that, for instance, if a patient gets out of bed at night to go to the lavatory, trips on an obstruction, and dies in a few hours from a fracture of the base of the skull the death is automatically recorded as a post operative death. Similarly recorded is the death of a patient who has a fatal infection during an epidemic of influenzal pneumonia. This severe standard may have its drawbacks as well as its advantages. If the deaths subsidiary to operation, as instanced above, form any large proportion of the total, their reduction or increase may mask the true post-operative deaths.



Some information of their number and immediate cause would therefore be an advantage.

Accepting this inclusive definition of post-operative fatalities, a comparison of the figures presenting the four major groups of tumours suggests that most improvement has taken place with tumours situated outside the cerebral substance. Acoustic tumours show a decline in operative mortality from 25 per cent. prior to 1922, to 4. 4. per cent. for the period 1928-31. The rate for menengiomas has fallen from 21 per cent. to 7·7; for pituitoryadenomas, from 13. 5 percent. to 5. 7, for gliomas, from 30·9 to 11·0 percent. Prof. Cushing does not accept the view that these improved results are due to earlier diagnosis as a whole. He thinks that the operations each year become increasingly critical and difficult. The principal steps that have made it possible not only to attack these more formidable problems but actually to lower the operative mortality, he enumerates as: (1) the generally accepted methods of decompression to relieve tension (2) such irreproachable wound healing that secondary infections are practically unknown; (3) the separate closures of the galea by buried fine black silk sutures, which has made the once dreaded fungus cerebri nearly forgotten; (4) in place of ether inhalations, the introduction by DeMartel of local anaesthesia, now supplemented when necessary by the rectal administration of tribromethanol; (5) the more precise tumour localisation which in obscure cases Dandy's ventriculography permits us to make; (6) the use of a motor driven suction apparatus as an indispensable adjunct to every operation; and (7) the successive improvements in methods of haemostasism which, since, 1927, have been most advantageously supplemented by the introduction of electro-surgical devices. To which must be added the more careful regime and observation during the immediate post operative stages.

This work should be a source of encouragement to all interested in brain surgery, and stands as a proof of the value of a highly organised technique which admittedly takes up much time and demands skilled team work. The statistscs hitherto presented by no means exhaust the interest of the material.—*The Lancet 192 pp. 23 July 1932.*

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**Treatment of Varicose Veins.**—F. L. Smith states that the year 1911 marked the beginning of successful intravenous treatment of Varicose Veins. Linser observed that injection of 1%. solution of mercuric chloride had a sclerosing effect on the veins. This gave him the idea of treating varicose veins, and later he reported having treated 6,000 patients, with a satisfactory degree of success. A few patients did not respond, due to toxicity of the mercury. Hanschell in 1913, used qninine in a 6 per cent. solution, but this did not prove

popular. From 1916 to 1918, Sicard experimented with luargol and sodium corbonate in solutions of 5 to 15%. These solutions produced necrosis, and the patients were incapacitated for some time. In 1921, Linser discontinued the use of mercuric chloride because of its toxicity and substituted a 15 to 20 per cent, solution of sodium chloride. In the same year, Nobl reported the sclerosing effect of glucose in solution of 50 to 60 percent. Génévrier took up the study of quinine, which had been previously introduced by Hanschell, added a local sedative to the solution, and finally reported on solution consisting of Quinine dihydrochloride, 12%., and urethrane 6 per cent. In 1924 Sicond had abandoned Sodium carbonate and luargol and reported marked success with 20, 30 and 40 per cent solution of soduim salicylates. About 1930, Dicksonwright, of London, reported his work on the use of sodium morrhuate in 3, 5 and 10 percent solutions. At present therefore, there are several sclerosing solutions from which to choose. Since Nobl. brought out the glucose solution, many combinations of invert sugar have been placed on the market. Until the advent of Sodium morrhuate, however, all of the solutions with the possible exception of invertose, produced sloughs if injected outside the vein. They like-wise produced varying degrees of general systemic reaction and local manifestations. Glucose and sodium chloride may give a general reaction following injection, manifested by sensations of of dizziness, faintiness, and warmth in the throat. It is advisable before treatment, to test the patient's tolerance to the drug. This is also true of quinine and urethrane, which should be given in a dose of 0.5 to 1 c. cm. as a preliminary measure. Manifestations of systemic reactions: bitter taste in the mouth, burning sensation in the throat, abdominal cramps, and possible hastening of the menstrual function. Quinine also produces severe sloughs if injected outside the vein. The advantages of quinine are that it does not produce pain at the time of injection, and that it is an effective sclerosing agent. Sodium morrhuate has equally good sclerosing action and gives no pain or general systemic reaction. In a strength of 3% it is the ideal sclerosing solution for the treatment of stellate or "spider-burst" veins. For the usual case a 5%; solution is used. Smarting may attend the injection, but one can be assured that sloughing will not result. If one fails to obtain the desired results with the 5% solution, the ten percent, solution may be given in the same dosage as the 5%, namely, 2 to 6 c.cm. In more than 2,000 injections the author has not experienced a slough and the incidence of recurrence is less with this, and with quinine and urethrane, than with any other solution he has used. (*Proceedings of staff Meetings of the Mayo clinic, Feb. 10, 1932.*)—*Through the Practitioner June 1932.*

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***'Health' Photo Competition No. 2***

# 'HEALTHY MOTHER & CHILD'.

## Photo Contest.

The proprietors of Health request readers of the Journal to submit photos of their healthy child and its healthy mother for the above photo competition.

This is the 2nd competition of this kind the first having been conducted in March '30. The subject was then 'healthy child within 5 years'. The present subject is "healthy mother and child" as aforesaid.

Prizes of Rs. 25, 15, and 10 with consolation prizes if necessary will be awarded to those whose photos have been adjudged as best. The competition is open to all Indians resident in India, Burma or Ceylon or Indians abroad. In the photo which may be a snap-shot or studio portrait, the child should be with the mother. No age limit is fixed to the mother but to the child it must be above 1 and below 4 years, on the date photographed. Photos should have been taken in 1932 only. Badly taken photos even of healthy mother and child will not win a prize. All photos should be good enough for reproduction and should be addressed to The Editor. 'Health' 323, Thambu Chetty Street, Madras, so as to reach them on or before 15th November '32 with a declaration given in the coupon given in the current issue of Health, English and vernaculars. Any number of photos may be submitted provided each one is accompanied by the aforesaid coupon pasted on its back.

The proprietors will have the photos, judged by competent authorities whose decision will be final. The winners' names will be published in January '33 Health. It is understood that the proprietors of Health have the right to publish the photos submitted, if they so desire.

**As an inducement to Photographers Rs. 10/- will be paid for each photo published.**

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**HEALTH,**

**An Illustrated Monthly Journal devoted to Healthful Living**

**Estd. 1923.**

EDITED BY

**Drs. U. RAMA RAU. & U. KRISHNA RAU, M.B.B.S.,**

**and Published in English, Tamil, Telugu, & Kanarese Separately.**

**Price 2 as. a copy.**

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## OBSTETRICS AND GYNAECOLOGY.

**Treatment of Eclampsia.**—At the meeting of the North of England Ostretrical and Gynaecological Society in Sheffield on February 26th, a paper on the conservative treatment of eclampsia, with a report 100 cases, was read by Drs. E.A. Gerrard and R. L. Newton (Manchester). These cases had been collected during a period of three and a half years, at St. Mary's Hospitals, Manchester, and one or other of the authors had been partly responsible for every case.

In a review of the results of treatment during the twenty years 1908-28 a comparison was made with those obtained in the cases described. Before 1920 there was no routine method of treatment, which, however, usually consisted of purgation and diaphoresis, while Caesarean section of accouchment force were frequently employed. The mortality rate for this period was 35-6 percent. In 1920 the Dublin method was adopted, and as a result the mortality rate fell to 19.8 for the the following eight years. A criticism of this treatment was the adverse effect that repeated colonic lavage appeared to exert upon the patient's heart. In 1928 Straganoff's method was combined with certain eliminative measures. A quarter of a grain of morphine and 1 c. c m. of coramine (a camphor preparation) were given. Half an hour later gastric lavage was performed and 2 oz. of castor oil and 2 minims of croton oil were introduced into the stomach. After a colonic lavage 2 oz. of magnesium sulphate were left in the colon. At one and a half hours, 30 grains of chloral hydrate were administered by rectum or mouth; morphine was repeated at three hours. Coramine was repeated at the fourth, eighth, twelfth, sixteenth, and twentieth hours; 30 grains of chloral hydrate were given at seven hours, 20 grains at twelve hours, and then eight-hourly if necessary. At the beginning of treatment—according to the method of Schwarz and Dieckmann—10 c.cm. of 25 per cent solution of magnesium sulphate were given intramuscularly (with 5 c. cm. after each convulsion), and at the same time 1,000 c.cm of 20 per cent. solution of dextrose intravenously, the injection being repeated if necessary. There was no operative intervention during labour, but in a certain number of cases induction of abortion or of labour was carried out on account of persistent albuminuria following recovery from eclampsia. The mode of delivery was by natural forces in fifty-four cases, by forceps in seventeen, and by induction suceeded by natural delivery in seven. There was spontaneous abortion in eight cases, and induced abortion in three, Version followed by extraction, breech extraction, Caesarean section, and craniotomy

were each performed on one occasion, and five patients died undelivered. There were seven deaths in the hundred cases, and the mortality fell from 10 per cent., in forty cases to 5 per cent. In sixty cases as a result of the introduction of dextrose and magnesium sulphate into the treatment the foetal mortality rate, after excluding eighteen cases of post-partum eclampsia and eleven abortions was 57.7 per cent. This also included neo-natal deaths. A detailed review of the cases was given after dividing them into two groups—the severe and the mild. The severe group included patients in coma, with more than six convulsions, or with a temperature of over 103°F. Only seven of the patients had attended the hospital clinic; of these three had not attended for some time, and all developed post-partum eclampsia. In two cases, post-partum eclampsia occurred—after the beginning of eliminative treatment for albuminuria. In another case ante-partum eclampsia resulted within a few hours of eliminative treatment being started, and in the last case eclampsia followed labour induced for persistent albuminuria. Albumin was absent from the urine on admission in five cases and none of these patients died. The urine was clear in seventy-eight of the cases on discharge from hospital.

In reply to questions raised during the discussion, Dr. Newton stated that the blood-pressure changes had afforded no help in the investigation. He only used chloroform during the preliminary washing out of stomach and colon in the presence of restlessness. The administration of glucose should be followed by polyuria, 200 grams being the maximum amount it was safe to give more, resulting in glycosuria.

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**Thyroidectomy Immediately Before Parturition.**—R. Fontaine and R. Bauer report an unusual case of a large goitre for which a thyroidectomy was performed within a few hours of parturition. The patient, who was the mother of four children, was admitted to hospital with a huge colloid and cystic goitre which was causing severe pressure symptoms. The goitre had been present for several years and had increased in size with each pregnancy, and when seen the patient was suffering from intense dyspnœa, her tace and limbs being cyanosed. Fetal heart sounds could be heard, but it appeared necessary to relieve the asphyxiation of the mother if the child's life was to be saved. The operation was conducted under local anæsthesia. novocain being used with cantinuous inhalation of oxygen. Thyroidectomy was performed; the goitre which was found to be multi-nodular and parenchymatous, weighed 600 grams. The respiratory distress was immediately relieved, and six hours after the operation labour pains began. Delivery was expedited by the use of forceps, and two hours later a healthy child was born. Convalescence was normal, except for some irregularity of the heart which necessitated rest. The patient was finally discharged from hospital at the end of six weeks in excellent health.—*Bull et Mem Soc Nat de chir, 1931, 20—Through Journal of Canadian Medl. Association.*



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**Conservative Treatment of Pelvic Inflammatory Disease.**—Leonard Averett (*Medical Journal and Record*) summarizes his experience in cases of pelvic inflammation and its sequelæ in the following conclusions: 1. Surgical procedures performed in the acute or subacute stage of pelvic inflammatory disease give a greater morbidity and mortality, and as all or most of the pelvic organs are sacrificed, the processes of reproduction and menstruation in women of child-bearing period are destroyed. 2, Surgery should be limited to evacuation of pus when an abscess forms and to the control of hæmorrhage only. 3. In puerperal infections, vaginal examination should be performed gently and as infrequently as possible to avoid further trauma. If the placenta is retained. separate it with the finger and remove with placental forceps. Keep the curette out. 4. In puerperal septicemia, the use of large doses of polyvalent antistreptococcic serum, frequent small blood transfusions and non-specific proteins are a valuable adjunct, if used eorly. 5. In non-puerperal acute pelvic inflammation non-specific proteins used early and at frequent intervals will act as an analgesic and help to bring about resolution by an increased lymphogenesis, carrying off all or most of the product of infection. 6. In operations performed upon patients of the child-bearing age suffering from inflammatory disease as much as possible of the organs of reproduction should be conserved and thus the process of menstruation and reproduction maintained. *I.J.M.S.*

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# Correspondence.

## THE INTERNATIONAL SOCIETY OF MICROBIOLOGY

### (A note on its constitution and present status.)

The International Socity of Microbiology was established in 1930 with the object of promoting scientific thought by creating a closer relationship between scientific workers in different countries and especially of spreading the idea that all its members are united in a common ideal of peace and constant friendship.

The Society is interested in all Microbiological Sciences (Medical, Agricultural, Botanical): Bacteriology, Immunology, Parasitology, Zymology.

An International Congress of Microbiology is held every 3 years. A General Meeting is held at the end of each Congress. The permanent office of the Society is in Brussels.

The Society is directed by a Central International Committee and a permanent Commission. The Central Committee is composed of the members of the Society's Board, of the members of the permanent Commission and the Chairman of the national Committees.

The members of the International Society are to form, in their respective countries, either a national Committee or Sectional Committees, who in turn elect a national Committee. The national Committees so constituted form a relationship with the Societies of Microbiology existing in these countries and the International Society of Microbiology.

The Board is composed of (1) the Chairman of the International Society, (2) two Vice-Chairmen appointed for 3 years by the Central Committee and (3) three General Secretaries, one for the German language, one for the English language and one for the French language.

The permanent Commission is composed of (1) the Chairman of the Belgian National Committee, (2) a member elected at the first general meeting who works as its Secretary, (3) a Treasurer, and (4) the Presidents of the last four Congresses. This Committee manages the property of the Society.

*The members of the International Society are elected by the office of the Central Committee, after proposal by the National Committees.* These proposals are transmitted to one of the 3 General Secretaries of the Central Committee. Any person who wishes, therefore, to join the International Society of Microbiology *must first address an application to the National Committee* of his country. The National Committee will then make its proposals to the Central Committee. The General Secretaries send a list of the members proposed by the National Committees of the respective countries every year to the members of the Board of the Central Committee who are to ratify the list within a period of three months.

After a proposal of the Central Committee, each General Meeting may appoint an honorary President and honorary members.

A general Meeting of the Society will be held every 3 years on the occasion of the International Congress organised by the Society, which will take place in the city selected by the preceding General Meeting.

The official langauge used in the Congresses are English, French and German. The different subjects treated at the Congress are reports, communications and demonstrations.



The President, together with the Central Committee, determines upon the nature and the number of the scientific problems which are treated in the reports and chooses the Rapporteurs. They also decide upon the duration of the Congress, which is ordinarily 5 days.

The communications must treat the subjects decided upon for the reports. Published papers will not be accepted. The writers of reports and communications shall address to the Secretary of the Board of the Congress a resume of these resports and communications. These texts will have to be in the hands of the Secretary of the Board of the Congress 3 months before the opening of the Congress in case of reports and 2 months in case of communications. The writers of reports and communications are requested not to use any historical or literary introductions and to report only on new work. The time allowed to authors will not exceed 30 minutes for reports, 10 minutes for communication and 5 minutes for discussions. Those taking part in the discussion will have to send to the Secretary a summary of their statements on the day following them.

The first International Congress was held in Paris from 20th—25th July, 1930, under the presidency of Prof. Jules Bordet. The following countries, who had formed national committees in their respective countries, were represented:—Germany, North America, England, Argentine, Austria, Belgium, Brazil, Bulgaria, Italy, Japan, India, Norway, Poland, Portugal, Roumania, Sweeden, Switzerland, Theco-Slovakia, U.R.S.S., Yugo-Slavia.

The 2nd Congress will be held in Berlin in 1933. Geheimer Hofrat Professor Hahn, Director of the Hygiene Institute of the Berlin University, has been elected as the President. The following gentlemen are working as General Secretaries:—

1. Dr. C. Dujarric de la Rivire, of the Pasteur Institute, Paris.
2. Prof. Gildemeister, Reichsgesundheitsamt, Berlin Dahlem.
3. Dr. Harry Plotz, Pasteur Institute, Paris.

The Treasurer of the Society is Mr. Georges Masson, Editeur, 120, Boulevard St. German, Paris (VI e).

The General Meeting which took place on the occasion of the first International Congress of Microbiology fixed the entrance fee at 20 gold francs (100 paper francs, 4 dollars or its equivalent in the various currencies). This sum is to be sent to the Treasurer of the Society, Mr. Georges Masson, Editor, 120, Boulevard St. Germain, Paris, *but only after receipt of notification by the* Central Committee

that the person in question has been nominated a member of the International Society of Microbiology.

The following is a provisional list of subjects selected for discussion at the 2nd International Congress to be held at Berlin in 1933 :—

1. Susceptibility to tuberculosis.
2. Tularemia.
3. Spotted fever and related diseases.
4. Significance of tissue cultures for microbiology.
5. The use of carbohydrates as antigens.
6. A subject from the Biochemistry of bacteria (to be shortly announced).
7. Helminthic research.
8. Symbiosis (for medical men and naturalists).
9. Parasitism among the higher plants.

The present Indian Committee is composed of the following workers :—

*President.*

Dr. U. N. Brahmachari, M.A., M.D., Ph.D., Physician, Medical College Hospital (ret) and Director, The Brahmachari Research Institute, Calcutta.

*Members.*

1. Col. R. Row. M.D., (Lond), D.Sc., (Lond), O.B.E., Professor of Pathology, Grant Medical College, Bombay, 27, New Marine Lines, Bombay.
2. Major G. Shanks, M.D., I.M.S., Professor of Pathology, Medical College, Calcutta.
3. Mr. V. Krishnamurti, G.M.V.C., I.V.S., Principal, Madras Veterinary College, "Veda Vilas", Vellala St., Vepery, Madras.
4. Dr. R. Khanolkar, B.Sc., M.D. (Lond), Professor of Pathology, Seth Gobardhandas Sundardas Medical College, Bombay.
5. Dr. H. Gosh, M.B. Director, Biological Department, Bengal Chemical & Pharmaceutical Works, 15, College St., Calcutta.
6. Dr. A. C. Ukil-Secretary, Professor of Bacteriology, National Medical Institute, and Director, Tuberculosis Research, Indian Resarch Fund Association, Calcutta.



The following is a list of members who constituted the Society at the time of registration :—

*Honorary President.*

Dr. E. Roux, Director of the Pasteur Institute, Paris.
Sir Almroth E. Wright, Professor, University of London.

*Honorary members.*

Messrs. Richard Pfeiffer, Baron Shibasaburo Kitasato, William Welch, M. W. Beijerinck, A. Yersin. J. Winogradsky.

*Members of the Central Committee.*

Prof. Martin Hahn (Germany), Simon Flexner (U.S.A.). J. G. G. Ledingham (England), Alosis Bachmann (Argentine), Roland Grassberger (Austria), Jules Bordet (Belgium), Carlos Chagas (Brazil), T. Petroff (Bulgaria), R. Kraus (Chili), WuLien-Teh (China), Thorwald Madsen (Denmark), D. Francisco Murillo (Spain), W. O. Streng (Finland), Albert Calmitte (France), H. Aldershoff (Holland), Hugo Von Preisz (Hungary), U. N. Brahmachari (India), Serafino Belfanti (Italy), T. Kitashiwa (Japan). A de Besche (Norway), I. J. Kligler (Palestine), Z. Szymanowski (Poland). N. de Bettencourt (Portugal), J. Cantacuzene (Roumania), M. I C. Forssmann (Sweeden), George Sobernheim (Switzerland), Ivan Houl (Tcheco-Slovaki) J. L. Kritschewski (U.R.S.S.), G. Hoannovitch (Jugo Slavia),

*Bureau of Central Committee (Second Congress).*

1. Geheimerhofrat Prof. M. Hahn, President-elect of 1933 Congress at Berlin.

*Vice-Presidents.*

2. & 3. Gheheimr Prof. Neufeld (Berlin) and Geheimrat Prof. Fulleborn (Hamburg).

*General Secretaries.*

4. & 6. Dr. Dujarric de la Riviere, Prof. Gildemeister and Dr. Harry Plotz.

N. B. Any further information will be gladly furnished on request by Dr. A. C. Ukil, Secretary, Indian Committee of the International Microbiological Society, 82 3 Cornwallis Street, Calcutta.

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## INTERNATIONAL MICROBIOLOGICAL SOCIETY (INDIAN COMMITTEE).

### Appendix.

The International Microbiological Congress is held every 3 years. The first Congress was held at Paris in 1930. The next Congress will be held at Berlin in 1933. Only those members who are recommended by the National Committees are eligible for membership of the International Society. The membership fee for the Indian National Committee is Rs. 6 only a year. The fee for membership of the triennial International Congress has been fixed at 4 dollars or its equivalent. Members of the medical profession or of the Biological and Veterinary Science who want to contribute papers or to become members of the International Society are requested to communicate with Dr. A. C. Ukil, Secretary to the Indian Committee. 82/3, Cornwallis Street, Calcutta, for further information.

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# Book Reviews.

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**The Medical Annual.**—A year book of Treatment and Practitioner's Index—50th year, 1932 Edition. Edited by Dr. Carey Coombs. M.D., F.R.C.P., and A. Rendel Short. M.D., F.R.C.S., 674 pages. Illustrated [John Wright & Sons Ltd., Price 20 sh. Net.

This well-known epitome of Medical and Surgical progress has completed its 50th year of existence. Beginning in the year 1833 as a small volume of about 300 pages, it has now become a portly volume of nearly 800 pages and is profusely illustrated. We read in this issue how from its modest start it has, first under the Editorship of Dr. Percy Wild and latter under the direction of the present Editors (Dr. Carey Coombs and Mr. Rendel Short), reached its present state of usefulness. The present issue does not differ very much from its predecessors except in that it contains the portraits of all its contributors ever-since its first appearance.

Coming to its professional contents, the Medical Annual as usual gives us a review of the latest knowledge of all the most important diseases. Among many other subjects the following are the few which may be of interest to general practitioners and specialists:—Rheumatic Diseases, Continued Pyrexia, Cancer, Dental pain, arm infections, Lungs surgery, reneal disease and Angina Pectoris, Psychoneurois, Appendicitis, Surgery of the sympathetic system etc. We also learn in these pages of the

use of $Co_2$ in Carbon Monoxide Poisoning, Ammonium Nitrate as a Diuretic, the use of Lacarnal for Angina Pectoris, the value of the Serum Treatment of Pneumonia, the failure of the Vaccine treatment in Disseminated sclerosis, the Danger of Aperients in Acute Appendicitis the use of Novocaine injection in reducing fractures, of the Maggots treatment of Osteomyelitis and the value of Lead Selenide Injection in Cancer etc.

This issue also includes articles on such important veterinary subjects like distemper, Mange foot and mouth diseases etc.

Index to new inventions, preparations, books of the year, and a directory of the Sanatoriums, spas, nursing homes and other similar institutions of Great Britain have been mentioned in the supplement. In concluding we should like to congratulate the publishers and Editors on their success in bringing year after year this useful publication to the Medical Profession. We do realize how difficult it is for publishers and Editors to produce one book, but it need hardly be mentioned that to produce such a book year after year after surviving the storm and stress of half a century, speaks volumes of the untiring energy and zeal exhibited by the publishers and the Editors. We once again offer them our most hearty congratulations and trust that this volume will continue to meet with the same increasing recognition at the hands of the Medical profession.—*U.K.R.*

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**Collected Papers on Eugenic Sterilisation in California,**— By Human Betterment Foundation, Pasadena California.

A book of this type is difficult to review. It involves a consideration of the circumstances which have necessitated eugenic sterilisation, arguments for and against, probable advantages, disadvantages and abuses. how far these are kept in view by the authorities in California and lastly whether the book under review gives a clear picture of the conditions prevailing there.

In a highly controversial subject like eugenic sterilisation where deep-rooted sentiment and prejudice play a very important part it is not always easy to maintain a strictly scientific attitude and view the various factors in their proper perspective. In India especially where the birth of a son is considered essential for the salvation of the ancestors it is not likely that sterilisation will find great favour.

The Roman Catholic Church too, in spite of the fact that some great exponents of eugenic principles like Thomas Aquinas, John Mendel and others were catholics and priests. will withhold sanction to a measure which is definitely opposed to natural and moral law.

There are still many people who consider that compulsory sterilisation involves a gross infringement of personal liberty and when once such measures are permitted, there is no knowing what they might lead to in the future. But socialistic doctrines inculcate the sacrifice of individual privileges in the interests of society and so long as Karl Marx, Nietache, and Lenin are the modern Gods these protests are not of much avail.

It is said that sterilisation with its implied freedom from consequences is bound to increase promiscuity and venereal disease. But it is argued that society is not so rigid as before against sexual transgressions, the increasing reliability of contraceptives has made sexual promiscuity safe for intelligent people and no ethical interests are served in withholding similar privileges for mental defectives, but on the other hand society is a great gainer. Even assuming, for which we have no right to, that sterilisation will increase promiscuity, the problem resolves itself into a choice between society being burdened with a large number of idiots and imbeciles on the one hand and the doubtful increase of promiscuity on the other. The choice is fairly obvious.

Evolutionists tell us that in nature there is always a tendency for the surrvial of the fittest. But the tendencies of modern civilisation are towards the survival of the unfittest. The increasing care of the poor and the unemployed by the State, the large number of hospitals for the poor and the aged, and lastly the increasing number of mental asylums with their ever increasing drain in society are a few examples. When we know that such mental defectives are great social parasites, why not take measures to prevent their perpetuation and since sterilisation interferes least with their health liberty and bodily needs why should it not be adopted? It is not a panacea for all evils. It is only an invaluable and necessary supplement to all recognised protective measures of society. Argued thus it sounds very reasonable.

The inheritence of mental disease is thus another vexed question What are the forms of mental disease that are intended? Whether a dementia procox case should be placed on the same level with a hypochondrias or a psychonurotic, whether many psychotics by virtue of their disease are not sterile, are some of the questions which are not easy to answer. The obvious cases are of course obvious, but it is the borderland cases that cause great trouble.

Moreover, we are not absolutely certain that vasectomy in the male, salpingectomy in the female, the suggested operative procedures for sterilisation, do not produce any permanent organic or psychical



ill-effects. In the above paragraphs we have tried to outline some of the main difficulties and problems of Eugenic sterilisation. That is why, though many countries have accepted the principle they have not given effect to it in practice. California has taken the bold step and so far as many as 15000, sterilisations have been performed. The time being propitious the Human Betterment Foundation has published the results. The papers deal with a variety of topics. They show the care exercised in the due selection of cases, how the opinion of all the staff is sought for, in every case, the relatives are informed, and the Government's sanction is sought, the perfect operative technique and the good after results. Questionnaires are issued to the patients and their relatives about their economic and social status after sterilisation, their general health, the effect on menstruation etc,, and the writers are very enthusiastic about their results. Often the results are based on confusedly scanty data.

Although we can appreciate the principle and in selected cases, sterilisation is essential, there is always a danger of overdoing it.

So far as the papers themselves are concerned Dr, Wilkinson's "Sterilisation without unsexing", Dr. Mayer's "Eugenics is Roman Catholic Literature." Otis H. Castle's "Law and Human sterilisation" and Popenve's "Fecunding of the insane" are very interesting and repay careful study.

Eugenic sterilisation is a great social experiment and the world awaits the results in anxious expectancy.—*M.V.G.*

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**The Science of Signs and Symptoms.**—By Robert John Stewart Mc Dowall, D.Sc, M.B., F.R.C.P. (Edin.) Prof. of Physiology, Kings College, London. 1931, 440 pages. [William Heinemann. Ltd., London.] 21sh. Net.

This book is an enlarged and altered edition of the author's well known "Clinical Physiology." We certainly agree that if medicine and Surgery are to progress there should be a closer study between Physiology and these sciences. There is also no doubt that clinical teachers have no time to teach the essentials of diagnosis and treatment and also how signs and symptoms are produced. Prof. McDowell's book is intended to supply this want and make the reader think about many things which he has hitherto taken for granted or not bothered to enquire into. The scope of such a work is necessarily long but the author has briefly and very interestingly touched on a large number of very important subjects such as Posture, Equilibrium, The Blood Pressure, The Integration of Circulation, Surgical shock, cardiac efficiency, Anoxaemia, Vitamins, oedema, the Acid base equilibrium and growth. The book for the

most part is written in a clear style and will certainly make its readers understand diseased processes better and will also stimulate them to take a greater interest in physiological principles.—*U.K.R.*

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**Demonstration of Physical Signs in Clinical Surgery, 3rd Ed.**—By Hamilton Bailey F.R.C.S., (Eng.), Surgeon, Royal Northern Hospital, London. Revised and enlarged, 318 illustrations. [John Wright & Sons, Ltd., Bristol.] 21 sh.

This useful book is packed with practical hints and suggestions and contains matter so well arranged as to inculcate a sense of orderly and systematic investigation. The author's survey of the clinical surgery is comprehensive, his style is lucid and the illustrations are simply excellent. The book contains valuable collection of of all recognised signs used in clinical surgery and a great aid to student and house-surgeon or practitioner, in supplementing the systematic description of his text book. We congratulate the author on the production of such a useful work. We recommend the book to be in the hands of every student of clinical surgery and on the table of every junior practitioner. Every student must be compelled to possess this book.—*U.R.R.*

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**Emergency Surgery.**—By H. Bailey F.R.C.S., (Eng.) Surgeon, Royal Northern Hospital, London. Vol. II, 430 illustrations, 415 pages. [John Wright & Sons, Ltd., Bristol.] 25 sh. net.

This II Volume of Emergency Surgery completes the work and deals with Thorax, Spine; Hand, Neck, Extremities etc. This book supplies the surgeon, with the information he needs in times of trouble and urgency. The illustrations are very clear and much care has been taken to render them as accurate as possible. Every student of surgery must have a copy of this useful and instructive book. For a surgeon mere looking at the illustrations, will refresh his memory. We consider this is one of the best illustrated guides to emergency surgery. We strongly recommend the book to our readers.—*U.R.R.*

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**Wheeler and Jack's Handbook of Medicine, Ninth Edition.**—Revised by John Henderson, 1932. [E. & S. Livingstone, Edinburgh.] Rs. 9/6.

This is the latest edition of probably the most widely used handbook of medicine: a handbook which, since 1894, when the first edition was published, successive generations of medical students throughout the English-speaking world have found almost indispensable.



Owing to the untimely death of Dr. W. R. Jack, who had been responsible for every previous edition of the book except the first, the present edition has been brought out with the co-operation of Dr. John Henderson, who in preparing it for the press has faithfully followed the tradition established by his predecessor. The general plan and arrangement, and the bulk of the subject matter of the book remains practically unchanged, but additions and alterations necessitated by the newer dovelopments in medical knowledge have been made. Amongst the additions may be mentioned the new sections on Coronary Thrombosis, Hepatic Efficiency and Cholecystography, Acute Febrile Polyneuritis, and Narcolepsy. The sections that have been rewritten include those on Vitamins, Pernicious Anæmia, and Arthritis Deformans. The new matter that has been introduced is really considerable, though the bulk of the book has been increased by only 24 pages.

The book satisfies a real need, and we can safely predict that it will continue to enjoy the success and popularity it had in the past.

We should congratulate the publishers on the excellent get-up of the book, which is a great improvement on the previous editions.—*K.C.P.*

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**Filterable Virus Disease in Man.**—By Joseph Fine. M. D., B. Sc., D.P.H., D.T.M. pp VII + 144. 1932 [E. and S. Livingstone Ltd. Edinburg. 6/-Net].

The objects of this book are to present in a compact form the essential facts of virus disease in man, to show the relationship of virus diseases to one another, and to review the present position in the case of several diseases where leading workers are in disagreement.

There can be no doubt that the subject of virus diseases has increased in importauce in the last few years and presents some of the most fascinating problems in modern medicine and Dr. Fine has placed a large majority of medical men under a deep debt of gratitude to him by giving a clean and general idea of the subject in his book.

An introductory chapter classifies the chief virus diseases and in subsequent chapters, the author gives the main features of each virus, its immunological organisms, and its claims to be regarded as the causative agent for any particular disease. A short description of the clinical features of several virus diseases is also given. From the point of view of the clinician the sections dealing with Herpes, Small Pox, acute anterior poliomyelitis, rabies, Encephalitis lethargica, Disseminator Sclerosis, Measles, Influenza, the common cold and Psittacosis are perhaps the most interesting. The book is

very carefully written and will be of great value to the student of medicine, clnician, bacteriologist and public Health officer.—*U.K.R.*

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**A new theory of cancer and its treatment**—C. F. Marshall MSc. M.D. F.R,C.S. Pp. 53—Price 3/6 net. Bristol: John Wright & Sons. Ltd.

The book advances new views on the etiology, bio-chemistry and treatment of cancer. It is a fore-runner of a later work which will give an account of further investigation into the subject. A great amount of attention is paid to the early stages of the cancerous process and the pre-cancerous period. Examination of blood serum for malignant disease, should he carved out as a routine in all cases of chronic ill-health.

There is no doubt that the truth lies in studying the so-called pre-cancerous stage and the book is recommended to all doctors as it gives a real-insight into the cancer problem.—*N. S. N.*

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**Practical Prevenception or the Technique of Birth Control.**—By *William J. Robinson, Ph.G., M.D., Publishers The American Physiological Society, Hoboken, U.S.A.* pp. 170.—29 Illustrations.

The author is the first to advocate voluntary limitation of offsprings and he is also the first to experiment with and to compound various formulæ for prevenceptive purposes. So his work is highly valuable to the medical profession. He treats the subject in a very scientific way. He describes the different kinds of prevenception and its uses and abuses.

According to the author the best prevenceptive is as follows:—

"A properly made and properly applied prevenceptive is Jelly. It makes little difference what prevenceptive or acid is used in the Jelly, quinine, chinosol, boric acid, lactic acid, salicylic, etc. In my opinion, jelly contained with acid chinosol, and lactic acid, is the best."

The book contains very useful informations which will be of great help to the medical profession who are interested in the Prevenception method. We commend the book to the profession.—*U.R.R.*

**Male Disorder of Sex.**—By *Kenneth M. Walker, F.R.C.S., Publishers.—Jonathan Cape, 30, Bedford Square, London.* 5sh, pp. 191.

The disorders of sex are the cause of vast amount of unhappiness even when they have direct little effect on health. This book has been written for those who have become practitioners, armed



only with scanty knowledge of sexual difficulties they have received in the course of their medical training.

The book, the author claims, is based on more of his practical experience than on literature. The book deals on physiology of sex, impotencey, and its treatment both surgical and medical, etc. The second part deals with sterility and treatment of sterility. The chapter on 'Sterility' is very useful and instructive. We commend the book to the profession.—*U.R.R.*

**Technique of Contraceptian.**—By *James F.Cooper, M. D. Publishers.—Day Nichols, Inc,. Publishers, 15 East, 40th Street, New York City.* pp. 271 with illustrations. 2nd Ed.

This book deals with the principles-and practices of ante-conception method, exhaustively. The author's main purpose of this book is the prevention of sickness rather than the curing of diseases. Not until maternity is controlled, will its great mortality and morbidity be materially controlled. So this volume based on modern clinical experimentation is both important and timely. The book is written exclusively for the medical profession. Much of the materials presented in this book have formed the basis of the lectures delivered by the author before 200 County Medical Societies. The book is the best of the kind we have read on the subject. We strongly recommend the book to our professional brethren.—*U.R.R.*

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## Books Received.

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*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. A.]

**Annual Report of the Public Health Commissioner with the Govt. of India Vol. I with appendices for 1929.**—With the Compliments of Major-General J. D. Graham, C.B., C.I.E., K.H.S., I.M.S., Public Health Commissioner with the Govt. of India. New Delhi,—[Govt. of India, Central Publication branch, Calcutta. Rs. 3-10-0.] Vol. II, 1930. Rs. 2.

**Suicide or Sanity**?—David Davis. Williams and Norgate Ltd., 28-30. Little Russel St., London, W. C. I. 2 sh.

**Genetic Principles in Medicine and Social Science.**—L. Hogben, Williams and Norgate Ltd., London W.C.I. 15 sh.

**Among the Nudists.**—Frances and Mason. Merrill, Williams and Norgate Ltd., London, W.C.I. 10 s. 6 d.

**The Work, Wealth and Happiness of Mankind.**—H. G. Wells, William Heinemann Ltd., London. 10s. 6d.

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