

2. It may coagulate *en masse* after withdrawal or in less pronounced cases only a fine web coagulum may occur.

3. The protein elements approximate the proportions which occur in blood plasma.

Pathology of the Syndrome.

A continuous circulation of fluid occurs within the spinal theca. Fluid in the lumbar region is being continually pumped from above by arterial and venous pulsation. Hence, if the ventricular fluid loses its communication with the lumbar, the latter must to a large extent become stagnant. Under such a condition there will be a constant admixture with lymph chiefly by way of the perineural lymphatics and soon the encysted fluid will have a protein content very similar to that of blood plasma.

There are two main groups of cases in which Froin's syndrome is encountered, acute meningeal affections, tuberculous, meningococcal or syphilitic and spinal neoplasms.

It is the second group that I propose to consider in the following discussion. Clinically it is easy to differentiate the two groups and there is no necessity to enter into a differential discussion.

Methods for Determining Protein Content of the Cerebro-Spinal Fluid.

Globulin.

In a Wassermann tube place 0.6 cubic centimetre of cerebro-spinal fluid and with a pipette run in 0.6 cubic centimetre of a saturated ammonium sulphate solution, so that it forms a separate layer below the cerebro-spinal fluid. An opalescent ring appearing within five minutes denotes a reaction.

Total Albumin Estimation.

To estimate the total albumin content it is necessary to have a series of standard dilutions of albumin ranging from 0.1% to 0.01%. The easiest method is to make a series of dilutions from normal human blood serum on which a Kjeldahl determination has first been made to ascertain the protein content. To make the standards take two cubic centimetres of the diluted serum in a test tube and add 0.3 cubic centimetre of 30% dilution of trichloroacetic acid and boil. This completely precipitates the albumin. The test tube may then be sealed off and the percentage albumin content labelled on the outside. To carry out the test two cubic centimetres of the cerebro-spinal fluid are placed in a test tube, equal in diameter to the standard and 0.3 cubic centimetre of trichloroacetic acid dilution is added. The mixture is boiled and the precipitate of the unknown compared with the standards.

Dr. Mackeddie has included the clinical history of a patient (H.W.) in his recent article to illustrate Froin's syndrome (see THE MEDICAL JOURNAL OF AUSTRALIA, May 22, 1926, page 577).

I would add that on April 27, 1925, a lumbar puncture was performed and it was found that the cerebro-spinal fluid yielded all the information characteristic of Froin's syndrome. The colour was a pronounced yellow; a web coagulum was present, as was fibrinogen present; the globulin response

was pathological and the total albumin content represented 0.3%.

A lipiodol plate revealed a block between the twelfth dorsal and first lumbar vertebra. Coincident with the lipiodol injection the *cisterna magna* fluid was examined and was found to be quite normal.

This was Froin's syndrome in its most typical form, but if the mechanism of the syndrome be reconsidered, it will readily be understood that partial blocks may cause changes which though not constituting a typical syndrome, yet are fundamentally of the same type. Frequently with much lower albumin percentages and in the absence of any yellow coloration there may be a strong presumption that we are dealing with the loculation syndrome, provided that the number of cells and other constituents are normal.

The following is a case of an atypical Froin's syndrome. Fuller notes appear in Dr. Mackeddie's article:

Mrs. E. L. was admitted on March 2, 1925, with a diagnosis of spastic paraplegia. On March 31 a lumbar puncture was performed. The cellular content was found to be normal; there was an increase in the globulin content and the total albumin represented 0.85%.

The loculation syndrome was thought of and at a later date fluid was examined from the *cisterna magna* and found to be quite normal. A lipiodol plate revealed an obstruction at the level of the eighth thoracic vertebra.

From the lumbar puncture findings alone it would have been impossible to exclude say syphilitic meningitis, but the fact that the *cisterna magna* fluid was quite normal proved a loculation syndrome to be present.

Conclusions.

Examination of the cerebro-spinal fluid yields valuable information in meningeal lesions.

A lumbar puncture examination combined with that of the *cisterna magna* fluid is of paramount importance in cases of compression paraplegia. Such examinations indicate the presence of a loculation syndrome which in turn is an indication for a lipiodol localization.

Reports of Cases.

NOTES ON A CASE OF STRIÆ ATROPHICÆ.

By W. E. GEORGE, M.B., Ch.M. (Sydney),
Australian Institute of Tropical Medicine,
Townsville.

Cases of the relatively rare skin lesion known as *stris atrophica* occur from time to time, the last recorded cases discoverable being noted by Hobbs (1923) who also gives a bibliography of the disease. The following case is a good example of the condition and is interesting both because no definite cause could be determined for the lesions and also because of their unusual localization.

The patient, M.C., is a girl, aged seventeen years. Six months before coming under observation she noticed "varicose veins" appearing over both buttocks and this has persisted up to the present. When the condition first appeared, the skin affected was very tender, especially when she sat down or stooped and there was continuous intense itching. The skin lesion has persisted since then, but there is now no pain, the only complaint being the presence of the lesions. The colour of the marks varies; it is more noticeable after exertion or when she is men-

GEORGE

struating. She has always been a delicate girl and has not played games like other children and she always feels tired and languid. Her appetite is fairly good, but she suffers with "bilious attacks" and has to be careful with her diet. She has no trouble with her bowels or urine and has had no previous illnesses except a "cyst" removed from a rib five years ago.

There is nothing of interest in the family history, she has ten half-brothers and sisters all healthy, but no full brothers or sisters.

On examination there were seen lines arranged symmetrically over the buttocks and resembling in appearance the *striae gravidarum* appearing on the abdomen of a woman in the course of her first pregnancy. They had, however, a livid purplish colour, not the pinkish colour of *striae gravidarum*. They were distributed in parallel rows perpendicular to the direction of the lines of maximum tension of the skin when the patient leaned forwards at the hips. The individual lines were irregular in outline and varied from 1.25 to five centimetres (a half to two inches) in length and were about three millimetres (one-eighth of an inch) wide. They commenced over the skin below the anterior superior iliac spines on each side and pursued an irregular course towards the folds of the buttocks. The arrangement was symmetrical and they were equally marked on each buttock. Over both hip regions the colour had already commenced to fade, leaving white linear scars similar to the typical *lineae gravidarum*. Some slight tenderness still remained over the scars on deep pressure. On passing the finger transversely across the *striae*, they could be felt as definite elevations. There was no history of any distension of the skin nor of any violent bending or stretching movements. She has not been growing rapidly.

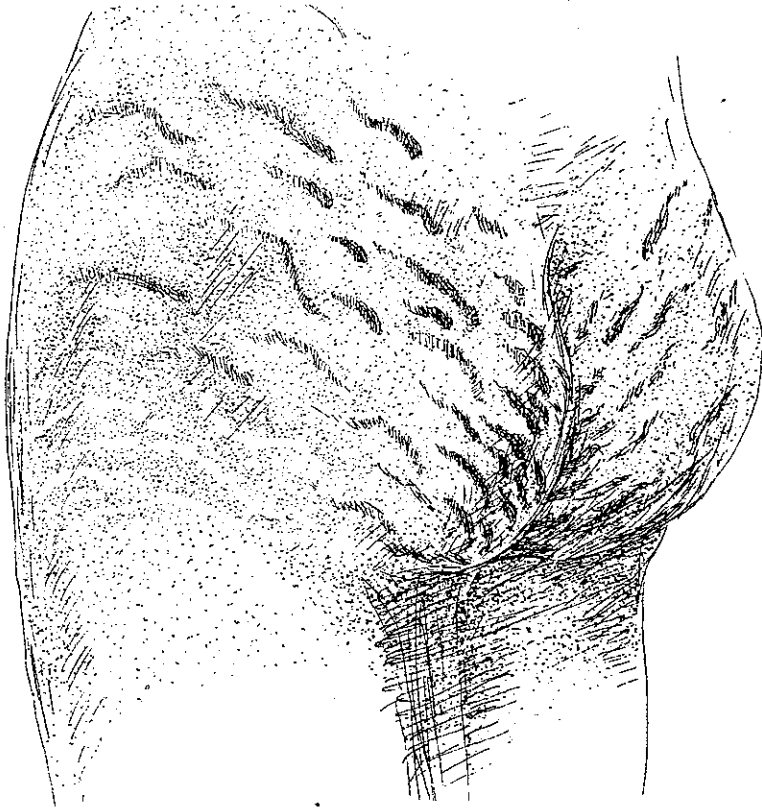
There was no evidence of disease of the heart or lungs, urine showed no abnormality; an X ray examination of the chest revealed no evidence of tuberculosis, the blood count, beyond a slight anaemia, was normal and the blood serum failed to react to the Wassermann test. Examination of the blood for microfilariae yielded no result.

In the ten cases recorded by Hobbs five of the patients had definite tuberculous disease of the lungs, three had advanced disease of the heart of rheumatic origin, one had parenchymatous nephritis and one had a large liver abscess secondary to a small localized appendiceal abscess. The commonest sites in his case for *striae* to appear were over the lower part of the thorax and above the patella. All his patients were between twelve and twenty-two years of age and in the absence of any evidence of rapid growth, distension by oedema or tumour he regards the condition as being due to an impaired nutrition of the skin caused by some constitutional disease and in

these cases the main factor is that of posture, the *striae* occurring at the positions of maximum tension. Apparently in the presence of severe malnutrition or some toxic condition about this age the elastic fibres in the deeper layers of the skin readily rupture.

Although no definite organic disease could be found in the patient, she was thin, anæmic and under developed and had lived all her life in the tropical coastal climate of Townsville. She has since been greatly benefited by a change inland where she gained five kilograms (eleven pounds) in weight in three weeks and now feels much stronger.

She is now (three months after first coming under observation) playing games and swimming and the *striae* are gradually losing their purplish colour, becoming paler and no doubt will eventually disappear, leaving behind them, however, pearly white scars similar to those met with on the abdomen of a parous woman.



Figure, Showing *Striae Atrophicae*.

Acknowledgments.

I wish to express my thanks to Dr. W. Chapman, of Townsville, who referred the patient to the Australian Institute of Tropical Medicine, also to Miss Gladys Roberts for the drawing which demonstrates the condition far better than any written description.

Reference.

F. B. Hobbs: "Some Observations on *Striae Atrophicae*," *The Lancet*, September 1, 1923, page 452.

Reviews.

PROGRESS IN SURGERY.

THE year book on general surgery¹ for 1925 has reached us. It has been edited by the late Albert J. Oschner.

The book must not be misjudged. It is not a textbook, but a *résumé* of the most

recent contributions to surgery. It is obviously a monument of revision and reading and the reader will be lost in admiration of the amount of work that must have been expended in its compilation.

The delver after recent knowledge will probably not search this volume in vain. Most of the later contributions have been reviewed. Apparently the book was finished after the appearance of the article by Gye and Barnard as no mention of their work is made in dealing with the causation of malignant neoplasms, but the student will find other theories to entertain him.

Gastric surgery is fully dealt with, but no didactic rules are laid down in dealing with the surgery of gastric and

¹ "The Practical Medicine Series, Comprising Eight Volumes on the Year's Progress in Medicine and Surgery": Under the General Editorial Charge of Charles L. Mix, A.M., M.D.; Volume II: General Surgery, Edited by Albert J. Oschner, M.D., F.R.M.S., LL.D., F.A.C.S., F.R.C.S.Ir. (Hon.); 1925. Chicago: The Year Book Publishers. Crown 8vo., pp. 712, with illustrations. Price: \$3.00 net.

duodenal ulcers. That is to say there is no decisive championing of one particular measure whether it be simple excision of the ulcer, excision with gastro-enterostomy or partial gastrectomy with or without gastro-enterostomy. Wisely no all-embracing dictum is attempted.

The effects of injecting alcohol into the Gasserian ganglion will prove of interest to many who will possibly find their own results conflicting with those here quoted.

The book may well be recommended as a work of reference and though the diction may jar at times, information may be obtained at that price.

The work is replete with many illustrations some of which are helpful.

ADVICE AND HELP FOR PARENTS.

A VOLUME that will be welcomed far and wide in the Commonwealth is Dr. Margaret Harper's "The Parent's Book."¹ The principles as its author states are not new. Rather they have borne the test of time and are confidently offered as sound teaching for the general public. Beginning with the expectant mother, the author gives simple rules of health with regard to diet, clothing, baths, exercise and rest and the dangers which call for medical aid, are enumerated. Minor troubles are discussed and simple remedies which may be used, are suggested. A few wise words on maternal impressions are added, which should save many mothers from unnecessary anxieties. The preparations required for the baby, his cot, clothes *et cetera* are next dealt with.

The chapter on natural feeding is important and full of the wisdom learned by practical experience, it should be a real factor in helping mothers to nurse their infants. Artificial feeding is then discussed and methods of modifying milk and the principles involved are explained. It is good to see that the misleading term "humanized" milk has been avoided. Standards for growth and food requirements follow and should lead to a more intelligent appreciation of the problems involved in infant feeding.

The chapter on the premature infant is also one of importance to the community. Many delicate babies are lost owing to ignorance in handling in the first hours or days of their life. Simple expedients available to most people are given. Then follow chapters on feeding of children up to two years, on minor ailments and on summer care of babies and finally some recipes and an index are added.

The book is well written, tersely expressed and full of the ripe fruit of experience. Dr. Harper is to be congratulated on her production. It is small. The whole effect is modest. This no doubt cheapens production and so makes it available to more, but it is worthy of a better setting.

It contains within its covers knowledge that the medical and nursing world need as well as mothers and when that knowledge becomes tradition, we may hope for results which will go far in populating this country with healthy children of our race.

A MANUAL ON OPHTHALMIC TREATMENT.

"OCULAR THERAPEUTICS" by Professor Franke, of Hamburg, has been translated into English by Dr. Loeb, of Chicago.² Any guide to successful treatment is of value. After so long an absence a work by a German professor is of unusual interest. One wonders how far research in Germany has been carried and what new therapeutic aids have been evolved.

This book is divided into two parts. The first deals with the various methods of treating ocular diseases. The

section devoted to general treatment includes an excellent summary of the treatment of tuberculosis and syphilis. Mechanical and local medical treatment, serotherapy and electrotherapy and the value of cold and heat and the various rays are considered in the section on local treatment.

The second part of the book deals with the various ocular disorders. They are arranged on an anatomical basis and the appropriate therapeutic agents are discussed. Many of the drugs are little known to British oculists. Is this the explanation of our surprise at finding in only one place the phrase "treatment practically useless?" Will the treatment suggested for macular degeneration, disseminated chorioiditis and opacities in the vitreous and cornea justify the author's optimism?

This book contains a valuable contribution concerning protein therapy. The indications and directions for milk injections are thoroughly explained. The author considers that they are of preeminent value in gonococcal lesions and various forms of retinitis.

The book is written clearly and concisely and should prove of great value to all ophthalmologists.

RADIOLOGY AND THE JAWS.

DR. STANLEY COLYER's book entitled "Chronic Infection of the Jaws" is a monograph dealing in particular with the radiographic interpretation of normal and morbid conditions of the teeth and adjacent tissues and in general with the relationship of focal infection of the teeth and jaws to systemic infection.¹

The book opens with a concise account of the normal structures as seen in a dental radiogram and then passes on to a consideration of the characteristic appearances produced by inflammatory processes. Great stress is rightly laid on the importance of attempting to recognize the earliest changes produced by the infection, before the appearance of the periapical abscess and granuloma. The author also emphasizes the point that much valuable information as to the extent of infection and the patient's powers of resistance can be obtained by a minute study of the cancellous bony tissue of the jaws around and even at some distance from the dental roots.

No mention is made of other pathological conditions met with in a radiological study of the teeth, such as dentigerous cysts, impacted and unerupted teeth, foreign bodies *et cetera*. These conditions would obviously not come under the classification of chronic infections, but might have been enumerated and illustrated with reference to interpretation and differential diagnosis.

The author takes it as proved beyond dispute that a definite relationship exists between oral sepsis and general disease. He discusses the sources and predisposing causes of chronic jaw infection and then passes on to a consideration of the paths of systemic infection. From his experience which is evidently wide, he deduces the fact that in the vast majority of chronic invalids and especially in those suffering with general debility the original cause of the trouble could be traced to infected jaws, not necessarily manifesting gross infection.

The chapters on indications for and results of treatment and the causes of the failure of many general diseases to respond to dental treatment are well considered and many novel theories are introduced as an aid to prognosis.

The illustrations are excellent "negative reproductions" and, though an index is lacking, the book is small enough and arranged well enough for easy reference without it.

Altogether, the work can be thoroughly recommended to physicians and dentists alike as an authoritative and well presented monograph on the subject of oral sepsis.

¹"The Parents' Book," by Margaret H. Harper, M.B., Ch.M.; 1926. Sydney: Angus and Robertson, Limited. Crown 8vo., pp. 89, with illustrations.

²"Ocular Therapeutics: A Manual for the Student and the Practitioner," by Doctor Ernst Franke, translated by Clarence Loeb, A.M., M.D., 1925, St. Louis: The C. V. Mosby Company. Royal 8vo., pp. 183. Price: \$3.50.

¹"Chronic Infection of the Jaws: A Short Radiological and Clinical Study," by Stanley Colyer, M.D. (London), M.R.C.P., D.M.R.E., with a Synopsis of a Series of Fifty Illustrative Cases by Reginald Curnock, L.R.C.P., M.R.C.S., L.D.S.; 1926. London: H. K. Lewis and Company, Limited. Demy 8vo., pp. 86, with illustrations. Price: 10s. 6d. net.