

(brain sand) also lie in the intervascular spaces. In more advanced stages the new membrane may become greatly thickened, its outermost layers (i.e., next cerebrum) being changed into dense fibrous tissue with obliteration of the vessels, while the more recently formed layers are similar in structure to those at first developed. Considerable blood usually escapes from the vessels of the new membrane by diapedesis in all stages of its formation, and the vessels also are very liable to rupture, giving rise to extensive hæmorrhages either into the substance of the membrane or between it and the pia mater. Sometimes layers of new tissue and blood, from half an inch to an inch or more in thickness, are in this way formed, greatly compressing the brain."

Ziegler expresses practically the same views, but in less detail. Church, of Chicago, in Starr's *American Handbook of the Diseases of Children*, says that this disorder is practically unknown in childhood, as affecting the spinal dura, and I cannot find cerebral pachymeningitis mentioned in the work. It does occur sometimes in rhachitic children, and, as already stated, in idiots, though not usually at a very early age.

PROFUSE MENSTRUATION.

BY DR. CHARLES P. NOBLE, PHILADELPHIA,
Surgeon-in-Chief, Kensington Hospital for Women,
Philadelphia.

We shall consider in this paper that profuse menstruation is synonymous with menorrhagia, or too great loss of blood at the menstrual period. Our subject will then embrace all those conditions which can give rise to this symptom. The terms profuse menstruation and menorrhagia are of practical value and have come down to us from the older gynæcology, which was almost purely clinical and dealt but little with the pathological conditions at the basis of symptoms.

The causes of menorrhagia are numerous. They are best grouped as constitutional, general and local.

Among the constitutional causes we have the hæmorrhagic diathesis and scurvy. Among the general causes cardiac and hepatic diseases are the most important. Whatever will bring about a lack of tone in the general circulation will pre-

dispose to pelvic congestion and menorrhagia. Incompetency of the cardiac valves and cirrhosis of the liver are the most frequent of the general causes of menorrhagia. Chronic Bright's disease is also a cause of menorrhagia; but in such cases it is questionable whether it is the kidney disease itself or the associated morbid condition of the blood vessels and of the heart, which is the real cause of the profuse menstruation.

The local causes of menorrhagia are: Pelvic congestion, endometritis, metritis, adenoma, polypus, fibroid tumors, carcinoma, or sarcoma, retained products of conception, hæmatocele, certain diseases of the uterine appendages, especially cystic degeneration of the ovaries.

A glance at this long list of causes of menorrhagia makes it apparent that it will be impossible in a brief paper to more than glance at the nature of these conditions, and to summarize our knowledge of their treatment.

It is worthy of comment that the common causes of menorrhagia vary with the period of life to which the patients belong. In young virgins shortly after the onset of puberty, menorrhagia at times occurs. Under these circumstances it is due to the fact that the menstrual function has not been perfectly established. There is lack of control on the part of the nervous system, both of the menstrual function itself and of the vasomotor nerves in general. In the cases which have come under my observation this has appeared to be the cause of the profuse menstruation. These girls were plainly "growing too rapidly," they were "shooting up," and had the lax tissues characteristic of such individuals.

Menorrhagia in young child-bearing women is due usually to some mishap in connection with pregnancy and parturition. An incomplete abortion, a sub-involuted uterus, laceration of the cervix, and retroversion of the uterus are the most frequent causes of menorrhagia in women of this class. Inflammatory disease of the uterine appendages is also frequently present in women at this period of their lives, and menorrhagia due to this cause, with co-incident endometritis, is quite common.

Menorrhagia occurring in women approaching the forties, and in those who are older, is of very suspicious import. In younger women, as a rule, it is a symptom of some curable condition, and is