stitutional state or circulatory condition which favours the production of that mental state, was not very clear and distinct. Therefore, although they were analysed, I shall exclude the sixteen from further consideration, except to add that most of these cases of lighter mitral disease, although many of them were general paralytics, exhibited an inclination to depression, irritability, delusions of annoyance, danger, ill-treatment, persecution, or showed inclination to dementia. Emotional facility was marked in some. Only a few had occasional expansive delusions or exaltation.

ABSTRACTS OF THE MILROY LECTURES ON SOME GENERAL CONDITIONS WITH REGARD TO EPIDEMICS.

*Delivered at the Royal College of Physicians of London,
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LECTURE II.—EPIDEMIC INFLUENCES (*continued*).

Small-pox.—The early part of this lecture was devoted to proving that small-pox, like fever, was under the influence of a pandemic factor which determined its development as an epidemic at some point in the first instance, and its subsequent extension to the northward in successive years. The illustrations given were mostly taken from the Indian returns, and such notices of its occurrence in Europe and America as gave specific information as to dates of commencement and decline of the disease, or statements of the deaths in particular years. Small-pox generally appeared in the southern part of Hindustan between the isoclinals 0° and 30° north in the first instance, and extended to the portion beyond the isoclinical 30° subsequently, varying in force in different parts of the country invaded in different epidemics, but still presenting a wave-like mode of progression in the same direction. Thus the epidemics reached a maximum in the Madras Presidency in 1868, 1872, 1877, and 1882; in the North-West Provinces and Bengal in 1869, 1873, 1878, and 1883; and in Punjab in 1870, 1874, 1879, and 1884. The want of information regarding Central Asia prevented the wave being traced further north; but in 1869 small-pox commenced at Marseilles, became epidemic in the north of France in 1870, in Holland and London in 1871, and in the north of England, Scotland, and Ireland in 1872; on the other side of the hemisphere, it could be traced in Teneriffe in 1870, and in the United States in 1871. The Madras epidemic of 1872, it was suggested, was part of the same wave which reached Western Europe and the United States in 1875.

Pandemic Waves.—Nothing, it was said, is known of the intimate nature of these pandemic waves, nor had any explanation been given as to why they should proceed from south to north. Further, the kind of fever developed, as it was assumed, under their influence varied very much at different periods, and this was enough to show that the pandemic wave of itself was insufficient to account for such varied results, and that recourse must be had to other factors connected with each locality for the time. With regard to intermittent and remittent fevers, the endemic sources of malaria must be all that was requisite in most cases; but with yellow fever and plague and some other fevers something else was necessary.

Yellow Fever.—An examination of the epidemics of yellow fever observed at Sierra Leone, where the ordinary fever is the remittent, led to the inference that the immediate exciting cause of the disease is generated by a special factor acting on a suitable locality in a place where the disease appears, and which is either absent or in abeyance during the intervening periods. And a more extended series of statistics showed that from time to time there is, over a varying extent of the earth's surface, an increased activity of the factors which lead to yellow fever, under the influence of which that disease becomes developed when local circumstances are suitable. Of these the most important were the state of the weather and the presence of a certain amount of moisture in the soil. Too much water or too little stopped the disease; thus at Sierra Leone, where the rainfall was heavy, the epidemics came in dry seasons; while at Goree and Senegal, where the climate was dry, the epidemics fell on years more than usually wet.

Plague.—A study of the reappearance of plague at various points where it had formerly been epidemic afforded some evidence as to the factors concerned in the production of the disease. Special reference was made to the cases of benign plague, described by Tholozan as preceding severe outbreaks of the disease. Though this sequence had not been proved to be invariable, it indicated the operation of a separate factor, concurring with the pandemic wave in those localities where that form of disease presented itself. It did not appear that plague was communicated from the sick to the healthy by contact, but that the danger really arose from remaining in an apartment occupied by the sick. Several authors who had personal experience of plague had described it as "a poor man's disease that never went upstairs" and the sufferers, in addition to deficient food, had inhabited apartments badly ventilated, and often in the most insanitary condition. Whether there were a specific factor required to excite the fully-developed disease, or whether that causing the benign form merely became intensified in certain localities, from circumstances existing temporarily, were points which must be left for future investigation, which the progress of bacteriology might hereafter facilitate.

ON A NEW METHOD OF STAINING SECTIONS OF THE CENTRAL NERVOUS SYSTEM.

By FRANK J. WETHERED, M.B. (LOND.), M.R.C.P.

I AM indebted to Dr. J. Pal, of the Pathological Institute in Vienna, for permission to publish a new method, recently introduced by him, for staining sections of the brain and spinal cord.

It is in reality a modification of the method first introduced by Professor Weigert, but differs from it in many particulars. Dr. Pal claims the following advantages for this modification: The picture produced is sharper in outline; the nuclei and nerve-cells can be separately stained, and the process is a more speedy one. Not the least advantage is that the treatment of the sections by a solution of the acetate of copper is entirely done away with. Having worked with both processes myself, I can fully confirm all that Dr. Pal states. Dr. Pal's method is as follows:—

The spinal cord or brain is hardened in Müller's fluid in the ordinary manner, and when ready is embedded in paraffin, and the sections cut into absolute alcohol. An aqueous solution of hæmatoxylin of the strength $\frac{1}{2}$ per cent. is then made by dissolving the hæmatoxylin by means of heat, and, after cooling, some alcohol is added. This solution must not be kept very long, or allowed to stand in the sunlight. Immediately before using, a few drops of a solution of carbonate of lithium are added; on the addition of this salt the solution assumes a violet red colour. Dr. Pal uses three or four drops of the lithium carbonate solution to 10 cubic centimètres of the hæmatoxylin. The sections are allowed to remain in this stain for about five or six hours, at the end of which time they should be of a bluish black colour; they are then thoroughly washed in water until no more colour comes out; if they do not appear to be deeply enough stained, a few drops of the solution of lithium carbonate may be added to the water in which they are washed.

The sections are next to be "differentiated;" for this purpose they are first placed in a $\frac{1}{2}$ per cent. solution of permanganate of potash for 15-20 seconds, and then for a short time into "Pal's solution," until the white and grey matters are plainly defined; this is generally completed in one or two minutes. If black specks are seen on the sections, or if the white and grey matters are not quite distinctly defined, the process is to be repeated. "Pal's solution" has the following composition: Oxalic acid, 1 part, sulphide of potassium (K_2SO_3), 1 part, distilled water, 200 parts.

After having been taken out of this solution, the sections are thoroughly washed in water, and the nuclei may then be stained in eosin or carmine, the stain which acts best being alum-carmine. After another washing the sections are dehydrated by absolute alcohol, cleared in oil of cloves or creasote, and mounted in balsam.

Stained in this manner, the medullated nerve-fibres are coloured blue, and stand out sharply on a white background, presenting a strong contrast to the red nuclei.

In order to bring out the nerve-cells prominently, after the specimens have been "differentiated" they are placed for a short time in picro-carmine, which should be only slightly alkaline, and, after being washed in water, the nuclei may be stained as before in alum-carmine.