of predominating symptoms of a mental disorder with external indications pointing to a left frontal lesion afforded at least a corroboration of the inferences which the post-mortem examination of the other cases proved to be well founded. A. W. WILCOX.

The Action of Santonin on the Colour-sense, especially the Dichromatic Colour-sense [*Ueber die Wirkung des Santonins auf den Farbensinn, insbesondere den dichromatischen Farbensinn*]. (*Zeit. f. Psych., Heft* 4, 1901.) *Nagel, W. A.*

Prof. Nagel, who is partially colour-blind (green blindness), has been experimenting on himself with santonin. The rather puzzling action of this drug on colour perception has long been known, and many experiments have been made by previous observers. As, however, with some other similar drugs, there is great variation in individual reaction, and the unpleasant results that are liable to occur also stand in the way of experiment. Nagel's observations were chiefly made with Helmholtz's colour-mixture apparatus. Violet and blue appeared absolutely unchanged at all stages of santonin poisoning. At the other end of the spectrum, on the contrary—from yellow-green to red—the colours appeared pale or greyish from the first, and were finally seen only as white. The colour-system was not, however, thus rendered monochromatic, for though the spectral colours were affected, pigments, coloured glass or paper retained their vivid colours. These results correspond, on the whole, with those reached by some previous observers. Nagel's explanation is that the effects are produced not by the temporary falling out of one of the components of the dichromatic colour-sense, but, on the contrary, by the special stimulation of the blue or violet component. He remarks that, apart from santonin, strong stimulation of the retina with diffused white light produces increase of blue sensation, and he has also found that brief stimulation with strong sunlight produces, under certain circumstances, a blue after-image, and also that, with pupils dilated by atropine, small black objects on a bright ground are seen as blue. In this way he would explain the action of santonin, not as paralysing one element of colour-vision, but as abnormally stimulating another.

The other symptoms noted were a peculiar odour, nausea, and a high degree of nervous restlessness. At some points Nagel's observations recall the effects of mescal, although the chief feature of the latter—the visions—is entirely absent. HAVELOCK ELLIS.

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3. Physiological Psychology.

On Dreams [*Le rêve*]. (*Rev. Scient., June 8th,* 1901.) *Bergson.*

This is the subject of a lecture delivered before the Institut Psychologique. The part played in dreams by visual sensations of internal and external origin is all-important, but auditory sensations as well often determine the character of certain dreams. And so with sensations of touch. The author mentions interesting observations illustrating these

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points. One must remember that in what we call natural sleep our senses continue to work. Although they work with less precision they receive numerous impressions, which, while they would attract no notice during the waking period, may be vivid during sleep. The colours, the changing forms, which appear when our eyes are closed, constitute the material of our dreams; they do not produce them, because they are vague and ill-defined. Memory forms our dreams. Recollections of objects perceived more or less clearly, more or less difficult to recall during the waking state; these give shape to our dreams, although we cannot always recognise this. A conjunction of the two factors, memory and sensation, constitutes the dream. The author also examines the question of the psychological characteristic of sleep, the real or essential difference between perceiving and dreaming. It is not abolition of reasoning. To sleep is to be disinterested. In dreaming the same faculties are exercised as during the waking state, but they are in a state of relaxation, not in a state of tension. We hear a dog barking during sleep; we dream in consequence of an assembly murmuring, shouting, etc.; no effort is required. To associate the noise with the barking of a dog requires a positive effort. This force the dreamer lacks, and herein he differs from the subject awake. Other differences might be deduced from this essential difference. The author mentions especially three points: the incoherence of dreams, the abolition of the sense of duration which dreams often appear to manifest, and the *order* in which recollections appear before the dreamer, to fit in with the sensations actually present. H. J. Macevoy.

Contribution to the Semeiology of Dreams [*Contribution à la séméiologie du rêve*]. (*Gaz. des Hôp., May 23rd*, 1901.) *Vaschide et Piéron.*

A brief account is given of thirteen observations, carefully analysed, in which symptoms of illness followed upon characteristic dreams on an average forty-eight hours later, *e.g.* (1) a little girl, æt. 3½ years, dreams that she is asleep in a closed copper bed, and that a carpenter who looks like her doctor fixes a vice by her bedside and squeezes her head in it. She shortly after developed a febrile illness which proved to be meningitis. (2) A lady, æt. 41 years, dreamt that her neighbour came to see her with a serpent coiled about her neck, which entered her (the lady's) mouth and tried to come out by the ear. In order to protect her own child, which she thought was lying by her side, she compressed her own ear to keep in the serpent. She was bitten by it, and could hear the hissing of the infuriated reptile. Three days later she had a purulent discharge from the ear.

In other cases, membranous sore throat, typhoid fever, bronchitis, etc., respectively followed, at intervals varying from a few hours to two days, dreams in which the subjects experienced painful sensations referred to the throat—sensations of thirst, of suffocation, etc. etc. On the other hand, the authors have observed cases in which dreams of this character were not followed by anything untoward. Still, cases like the above they consider to be useful contributions to the study of the manifestations of pathological changes in the "subconscious" mind.

H. J. Macevoy.

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