

also high in acute confusional insanity. A repeated high density will confirm a diagnosis of general paralysis. The author suggests that the course of all mental disease is accompanied by metabolic disturbances of the brain tissue, leading finally to a loss of brain substance in general paralysis and terminal dementias, whereas in acute and recoverable mental disease the increased katabolism is temporary or periodic, and is compensated by an increased supply of nutriment to the brain, no changes being detected in this organ *post mortem*.

(2) The indigo-forming substances in the urine are very unstable, and their decomposition cannot be attributed to the influence of a moderate acid or alkaline reaction, light, temperature, bacteria, or atmospheric oxidation. Possibly decomposition is connected with an auto-oxidation. The indigo-forming substances have not yet been isolated from the urine. The Hoppe-Seyler and precipitation methods were tried without success, but by salting out from the urine and simultaneously extracting with ether and alcohol, products of a very unstable constitution were obtained which gave the indigo reaction, but which could not be solidified. It is unlikely that these products consist of potassium indoxylsulphate as generally held, as this substance is only unstable in acid solution, and resists decomposition after many hours' heating at 160° - 170° C. in caustic potash, and is completely decomposed in neutral solution only after heating at 120° - 130° C., whereas "indican" of human urine disappears at room temperature in acid, neutral or alkaline solution. It is more probable that indigo-producing substances of the urine are not always the same, but are a mixture of nearly related compounds of the indigo group. This would explain their varying behaviour in different urines.

(3) The usual tests for indican in the urine (treatment with an acid, an oxidiser and extraction with chloroform) are unsatisfactory. They do not give concordant results in duplicated experiments, and the indigo solutions are all colours between red and blue, decolorising spontaneously in many cases. Decolorisation may be due to oxidising impurities in the chloroform used for the extraction of the indican, or to "over-oxidation" due to secondary reactions from the presence of air.

The author has devised an improved indigo test termed the "carbon dioxide process," in which the urine is treated with hydrochloric acid, chloroform and hydrogen peroxide, the whole process being carried out in the absence of air by means of a stream of carbon dioxide gas. By this method pure blue solutions and concordant results in duplicate analysis are always obtained. The isatin test can also be improved by the exclusion of air.

F. E. STOKES.

5. Sociology.

Applicability of the Findings of the Neuro-psychiatric Examinations in the Army to Civil Problems. (Ment. Hyg., April, 1920.)
Bailey, P.

The American Army mobilisation has furnished the first national health survey. The completed results of the Neuro-psychiatric Service are presented. Facts of pathological significance were obtained by

the rejection of recruits, and the discharge of the recently enlisted who were reported unfit for service. The total of unfitness approximated 16 per cent.—a static fact not a product of war. The neuro-psychiatric group of diseases was fourth in order of frequency, only exceeded by (a) eye, ear, nose and throat; (b) bones and joints; (c) heart and blood-vessels. Up to May 1st, 1919, 72,000 such cases were returned to the civil community. These figures concern a limited male age-group; extended to total population they reveal a serious problem in public health and preventive medicine. Unwounded patients treated by the mental service to the same date numbered 69,394, the percentages being: Psychoses, 11; epilepsy, 9; organic nervous disease, 10; glandular diseases affecting growth, 7; neuroses, 17; ineptitude (alcohol or drug), 6; mental defect, 31; psychopathies, 9. Physical restraint proved all but unnecessary. In military hospitals grave cases rapidly recovered; the former custom of prison treatment did not so result. The first group is a medical problem; the last four are also sociological. Individuals of these four classes are everywhere—unrecognised, the despair of guardians, employers, and all connected with public policies. Ineffective themselves, they render others the same; they are the soil for sedition and for rapid hysterical mass movements. Reconstruction is for them impossible till their problem is studied and understood by the general community, and remedies are supported by legislation.

Neuroses.—Functional nervous disorders are startlingly wide-spread, embracing one-sixth of the total rejections (more than insanity and ineptitude together). Disagreeable personal situations are subconsciously avoided, not through malingering, but because the individual is incapable of self-help. The widely diverse symptomatology deceives alike relatives, associates, and even medical men. Whether rich or poor they haunt clinics with vague complaints, always idle or ailing; many were missed and classed as "gastro-intestinal disorders," and they probably form 10 per cent. of all patients in ordinary civil medical wards. They lack virile characteristics, cannot support physical strain, swell the inert mass readily inflamed by new doctrines, and in the army were tinged with unwillingness to serve. Two subdivisions are found: those who exhibit abnormally prolonged recovery after physical traumata; and those who lose heart in trying or uncongenial positions. Of the home cases 71 per cent. were out of the service in three months, and of a military group 61 per cent. spent two-thirds of their time in hospital. This class results in more ineffectiveness and unproductiveness than insanity. Remedies mean the classification and treatment of large numbers by methods of raising *morale* and idealism—in civil life hitherto chiefly by boys' clubs, scout organisations, "settlements," playgrounds, etc. Ideals are thus stabilised at the habit-forming periods. The greatest foe of the neuroses is found in working for others, in the replacement of personal preoccupation by co-operation and patriotism. Universal military service would be a helpful factor.

Mental defect.—Among neuro-psychiatric rejections these totalled 29 per cent. in whites, 48 per cent. in blacks, and in drafted men 6 per 1,000. Many were foreign-born—in New York State 31 per cent. of the rejected. In spite of examination more feeble-minded were passed than of any other class. Ordinarily one-third of this class can be trained

to 50 per cent. normal efficiency. In institutions 73 per cent. are useful, but training must be highly specialised and long. Defectives are useless for military service, and should not be accepted. Left alone they are costly and dangerous; segregated on farms they are especially efficient as agricultural labourers, even the low-grade boy having a promising future. In all the groups individuals are psychopathic in readily yielding to the exactions of existence. There is a separate group which cannot be classified by examination as pathologic. They are superficially brilliant and enthusiastic, but unbalanced and eventually disloyal to any organisation; suggestible, susceptible to propaganda or disruptive acts, or with abnormal personality traits, suspicion, self-consciousness, obsessions. They cannot get out of undesirable situations nor profit by experience; they are "recidivists," criminal or otherwise; individualistic and unfit for team-work. Delinquency is but a further step. In civil penal establishments defectives, exclusive of psychopathics, exceed one-third. The New York Commission of Prisons (1918) found feeble-minded in State prisons, 25 per cent.; reformatories, 26·5 per cent.; penitentiaries and workhouses, 33·5 per cent. Psychiatry and criminology are closely linked. Previous army experience anticipated 50,000 delinquents among three million men. Actually 14,000 occurred. The discrepancy appears due to (1) the wider representation in new armies, therefore higher grades than in old regular forces; (2) prohibition in camps; (3) the exclusion of potential delinquents by neuropsychiatric rejection. The great lesson is that our communities contain "fixed quotas of crippling and multiplying diseases" as yet uncontrolled; these individuals are handicapped towards society and injure it. Sound laws, secured, should be enforced as regards foreign-born mental undesirables, excluding citizenship; community agencies must deal with neurotics; drug manufacture and addiction should be properly supervised. There is required standardisation of all State care with extended control of defectives (parole, colony and institution care); generalised psychiatric clinics at courts, in correctional and penal institutions; the denial of full liberty to the deficient. Childhood and adolescence is the time for training subnormals, as well-formed habits are more valuable than intelligence. Psychopathies and criminal traits are often the outcome of environment (criminal, drunken or divided homes); even normals thus become deviates. Special classes benefit 90 per cent. of subnormals classified on intelligence and personality traits. In New York State alone 41,000 feeble-minded are outside institutions. The needs are abundantly proved, and a great field lies open.

JOHN GIFFORD.

A Study of Delinquent and Dependent Girls. (Journ. Delinq., March, 1918.) Ordahl, L. E., and Ordahl, G.

The inmates of the Geneva State Training School for Girls, Ill., were studied to acquire data for more scientific classification, treatment and parole. The article is of thirty-one pages with numerous instructive graphs. The institution encourages wholesome athletic, academic, industrial, and social achievement—healthy rivalry being an important adjunct. The series, representative and unselected, covered the total population of 432 girls. The psychological tests employed were: (a)