of activity ought to qualify, control or inhibit it. Immovable prejudice is a mild result of such unwholesome function ; when it is extreme an organised insanity is produced characterised by systematised delusions concerning self and a class of things in relation to self, which, known once as *monomania* or *partial mania*, has now received the not a whit more appropriate name, etymologically, of *paranoia*. Why should a person of good sense in regard to all the ordinary relations of life, able to think and act rationally in them, believe that he is the victim of a settled persecution in all sorts of impossible ways, or entertain the notion that he is a royal person unjustly kept out of his royal rights? The consistent and concurrent testimony of all those who come in contact with him and the plain exposition of the impossibilities of the imagined agencies utterly fail to shake the testimony of his own consciousness. His faith in that which is contrary to all reason is unshakeable ; he might heartily endorse Tertullian's maxim—*credo quia impossibile*," understanding thereby that the impossibilities of reason do not exhaust the possibilities of things, and distrusting the while the individual *credo* which confidently penetrates the mysteries. Were consciousness the pure light of a constant unity illuming the region of thought and feeling, it might be expected to expose, if not correct, the distraction of a disunited ego. It does not, because it has no such detached existence and independent authority, but, being incidental to the particular mental state, shares and declares its quality, attends submissively on the distracted action of confederate tracts.

Katatonia: in Relation to Dementia Præcox.

By W. JULIUS MICKLE, M.D., F.R.C.P., London.

IN youth, divided into its pubescent and adolescent periods, *and, in relation to our subject, taking only the forms of mental disease that may come into question or relevance*, besides idiocy's minor degrees, the chief to mention are simple dementia, hallucinatory, and confusional cases ; melancholic, maniacal, and "transitory" attacks ; periodical and circular psychoses; katatonia, hebephrenia, the paranoias ; hereditary forms marked chiefly by impulse or moral perversion ; cases on "mental

besetment" (obsessive) basis. Many other forms of insanity, of course, exist in youth.

I think that of the very large total number of cases of mental disease occurring in youth, there is a *relatively small group* to which the name "dementia præcox" may be fully applied, even in the strong sense of "dementia," in English—*small*, that is to say, compared with the very wide extension often given to that title.

And, of the group I mention, to some examples the name "paranoid dementia præcox" may seem slightly permissible, but not for choice or accuracy, *viz.*, the cases of intelligent young persons, or half-brilliant youths, whose previous mental precocious attainments as rapidly fail; whose quick mental deterioration, failing memory and attention, and accompanying urgent persecutory delusions (at the times when present) prevent them from giving good relevant account of themselves; whose gait, vacant smile, inane grin, facial grimaces, and other similar indications of defects and aberration of mind, and especially of "action," accompany the severe degree of mental dissolution. These premised; I now refer to "dementia præcox" in its wide signification accepted by many, and speak of the three-group division of "dementia præcox" into the *hebephrenic*, *the katatonic*, and *the paranoid* forms.

In the title "dementia præcox" of, or adopted by, Kraepelin, the "dementia" does not fully correspond with the meaning of the word usual in this country, *i.e.*, as degrees of loss of such mind as had developed, and connoting also a usual incurability; ideas mitigated and modified in the German expression used by Kraepelin. And he described what he considered as dementia præcox thus: "This peculiar and fundamental want of *any strong feeling of the impressions of life*, with unimpaired ability to understand and remember, is really the diagnostic symptom of the disease . . ." Again: "Besides the emotional barrenness there is also a high degree of *weakness of judgment* and flightiness, although the pure memory has suffered little, if at all. We have a *mental and emotional infirmity* to deal with . . . the incurable outcome of a very common history of disease to which we will provisionally give the name of *dementia præcox*." And, elsewhere, he made a tendency to mental deterioration of varying grades the peculiarity common to all the cases.

The descriptions by Kraepelin and his followers rightly describe a number of cases of types familiar; but the difficulty is to reach an agreement as to the relationship of the several types of cases, and of case-groups, and as to their appropriate places in the nosological chart.

I. *Hebephrenic Form of Dementia Præcox.*

This at puberty and later, and often, at least, with natively defective and morbid heredity, on which the auto-intoxications easily attending the enormous metabolic changes of puberty and adolescence act, as well as the severe nervous and mental commotions attendant on the establishment of all the new generative-function groups in *youth*—using this word as the short term for the ages of puberty and adolescence in both sexes. Co-operating factors in some cases are such as ordinary infective intoxications, cranial injury, masturbation, faulty educational pressure relatively to the native or modified endurance and educability of these mental weaklings.

On these bases, and under the conditions named: *Clinically*, in cases differently associated, are degrees and forms of native mental deficit or functional peculiarity; mental *deterioration*, from factors congenital in some, in others developing early, or early-acquired or partly so; more or less arrest and perversion of normal mental development; or mental derangement (hallucinatory, delusional, etc.).

Usual are, extreme childish egotism, obtrusive self-assertion, absurd silly inclinations or acts, fickle, and often incongruous mental depression of ordinary sad, or of hypochondriac type, and anguished states; often easily becoming varied by supervenient excitement, mental confusion, or exaltation. The emotional states, often not congruous with the real position at the time, may be grotesquely and utterly inappropriate whether lively or apathetic.

In general, the *actions* are apt to become fitful, irregular, misapplied, and mostly useless, occasionally destructive. The movements may resemble those of mechanical toys. Sudden cessation of work, or digression, or wanderings may occur.

The talk is, in many, characterised by long words, slang quotations, or prolix diction of pseudo-scientific or poetical type, or odd turns of expression in speech.

There may be fantastic whims, or silly bluster. Everything mental is fickle, and wears the garb of shallowness and silliness.

Striking symptoms are the working of the features in grimaces, especially when talking; silly, shallow facial expression; peculiar *mannerisms* of general bearing and attitude, mental and physical; *mannerisms* of "action" in detail; such as those of diction and of articulation; affected, verbose and would-be poetical rhyming, or oddity, or *neologisms*. Thus, in this imperfect mental development and enfeeblement, with puerile trend or set of mind, the intellectual and psycho-motor activities tend to display certain rudimentary perverted characters of movement and action, namely:

Irregular alternations of facile obedience and stubborn obstinacy, with nascent repetitive over-activity of movements and actions; and unduly automatic character of movements: elements and mild phases of negativism; or, on the contrary, of obedience of unduly automatic type; or of actual echo-praxis, or auto-echo-praxis, and of stereotypy.

Later on, such cases as these last still tend to, and may, *graduate into developed katatonia.*

The mental basis of hebephrenia may include original mental deficit; very early-coming developmental mental defect and deficit; supervenient mental derangement, and lastly, degrees of later acquired mental impairment.

II. *Katatonia as a Constituent Form of "Dementia Præcox."*

In my experience, the most striking general great clinical characteristic of katatonia consists of its vast clinical richness and immense variety—a clinical wealth partly patent, or even in some cases obtrusive, but partly, or in some, unobtrusive, and often not observed unless searched for and elicited, as regards some of the symptoms.

As examples of katatonia's extraordinary variety and richness of clinical phenomena, one may refer to manifold disorders and defects of sensibility, *e.g.*, psycho-anæsthesias, psycho-hyperæsthesias and paræsthesias, hyperalgesiæ, hypo-algesiæ; important in relation to the development of other symptoms.

Psycho-motor disorders and conditions of extraordinary number, variety and changefulness, including many relative to speech and writing.

Anomalous, exaggerated, or lessened reflexes in different phases of the disorder.

Some exquisitely displayed disorders of movement or volition, often more or less opposing, *inter se*, and extremely rich in varieties as regards speech and writing; and corresponding numerous and very different muscular states.

Motor-tension of all degrees; also incidental varieties of spasmodic and convulsive disorders of the most varied kind, in different patients, or in the same.

Anomalies of general and special "action," including actions often mischievous, violent, aggressive, dangerous, destructive outbursts, or fugues. Pathetic type of expression in actions corresponding to the shallow pathos when the latter is present.

To mention only one other symptom-group, there are the numerous morbid disturbances and conditions as regards the *self-consciousness and personality* of the katatoniac, including many examples of morbid change of personality, such as of rebellious off-shoots, with more or less separateness and independence, and claiming a degree of withdrawal, as some of these off-splits of consciousness achieve; or such as examples of morbid change of personality and morbid grouping of ideal sets, which in their further morbid development may culminate in double *alternating*; or double or multiple consciousness or personality of the *co-existent* type; to which latter I find it convenient to apply the distinctive name, *duple* consciousness.

To this mere outline of part of the symptomatic expression of katatonia, to its clinical richness and immense variety, there are to be added the delicacy, the delightful charm to the clinical observer of its wonderful phases, more interesting, and even alluring, than almost any form else in the whole range of mental disease—the whole domain of psychiatry.

Katatonia rivals hysteria and ought to share with it the reputation of being an extremely *protean* disease. Metaphorically speaking, katatonia is a sort of cousin of hysteria, and some cases manifest additional symptoms of hysteric type. Katatonia is certainly a most interesting and diversified mental disorder, revealing, in the total of the cases, not merely its own characteristic symptoms and grouping of symptoms, but in some cases also showing features common to it and other forms of mental and nervous disease.

In cases of katatonia we often find a somewhat periodical or

circular type of the successive phases, partaking more or less of that of the periodical or circular insanities—a katatonic quasi-periodicity or circularity.

It is often misunderstood and disguised in individual cases, and reported and discussed under the name of "puerperal insanity" by those who fail to perceive the really katatonic type of the clinical phenomena in the particular cases referred to as being brought about, or brought out, under puerperal influences.

In ordinary general and other hospitals *katatoniform* isolated symptoms or symptom-groups are not rare; the rarity is that of their diagnostic recognition.

Long clinical study of cases has led me to think that the symptom-groups in katatonia in developing come to graduate into one another; that development and graduation being brought about by the interaction and opposing tendencies of the physical bases of the morbidly disorderly-acting mental functions, that is to say, of the physical bases of the developing and changing symptoms, *viz.*, the opposing interactions and mutual influences of the *cerebro-neural* functional perversions manifested outwardly in the symptoms observed; also the attempts to reconstruct function on lower planes of mental development and evolution, these being the best now available and possible in the given individual patient.

If I am approximately correct in what I have stated about it, then surely katatonia is *not* essentially and necessarily in all cases a destruction or wiping out of mind, but, very largely, derangement of mind.

And this, although we may speak of all mental disease as presenting phases, aspects, or conditions of mental dissolution or involution; as, in a sense, the reverse of normal mental development in the individual, and of the trend or set of mental evolution in the race.

Many katatoniacs, indeed, recover, at least so far as to again take their places in the world, earn a living, resume a fairly useful and sober life, not without pleasure and happiness and the self-respect rightfully accruing to virtue and usefulness, even if of no high grade or stable tenure. The previous life, and often even the milder phases of the mental derangements of katatoniacs, may manifest various forms and vagaries of flighty feather-brained cleverness, although the mental products

may be relatively useless for the patient's life, or even detrimental in the further interplay of their bases in the production of symptoms.

If, and when, one agrees to a separate classification of the insanities of puberty and adolescence, which I prefer to call *the insanities of youth*, hebephrenia, and most cases of katatonia, would be included, the remainder of the katatonia cases coming on later in life.

What has been stated suffices to show the vast clinical richness of katatonia, *e.g.*, the psycho-motor and psycho-sensory, the emotional variety, the many changes and phases, divisions, transformations, and disintegrations of the personality in some cases; each of extreme variety, protean changefulness; and taking all cases together into consideration, combined in changes sometimes, or in some few examples, slightly kaleidoscopic; sometimes, or in some, far more leisurely.

Nearly twenty years ago, in *Brain*, the journal of the Neurological Society, vol. xii, 1889, p. 503, and vol. xiv, 1891, p. 99, I published articles on katatonia; the first being in relation to the general subject, and the semeiology of a well-marked example up to the date of publication; the second continuing the clinical record until the patient's death in the severe epidemic of influenza in London, 1890, and giving a record of the necropsy.

At the time of, and before, the former of these articles, I placed katatonia between periodical and circular insanities on the one hand, and hebephrenia, with paranoia (both "original" and typical forms) on the other hand.

The clinical phenomena nowadays grouped under "automatic obedience," or one of its synonyms, I described individually as they occurred. The medium and severe degrees of the symptom-group now usually termed "negativism" (which doesn't explain itself) I then named "mulish obstinacy."

Of that which is now dubbed "stereotypy" of action, I described the acts as done in a "stereotyped" way or manner; and to the basis of the characteristic repeated total of such acts I long ago applied the name "repetitive activity," which perhaps may apply better than "stereotypy," the word now so much used in that signification. The orations and declamations, when not markedly repetitive, I summed as "recitative loquacity."

Pathogenesis, etc.

Two questions meet us here:

(1) Is katatonia toxic, or again, auto-toxic in origin?

(2) Has katatonia a *demonstrable* pathological anatomy?

(1) *Is katatonia of toxic origin*, whether that intoxication is self-made, or of either imported, or of invading, type of microbial source? To the *general* question of toxic origin, as at least one factor, the reply, seemingly, is *yes*.

The whole history and features of the katatonic group seem to indicate long-continued intoxication, partly or mostly auto-toxic, but not necessarily limited to that category, and in some or many examples due to pathogenetic factors invading from without, or ingested.

The auto-intoxications may well be due to perversions and changes, both *qualitative* and *quantitative*, in the *general metabolism* and in the *internal secretions*, at the periods of the vast disturbances of nutrition and of function during the developmental changes of puberty and adolescence—the times of the establishment of new functions and the corresponding strain on the nutrition of the brain and its functional activities in developing youth.

This strain, great in all young persons, must be enormous in some cases, especially when defective or morbid neuro-mental heredity has inwoven strains of qualities of weakness, proneness to functional failure, to disorder and decay, degrees of defective organisation implying, indeed, producing, defects of native resistance, defects of stability of function and of organic integrity.

Thus, at various times and variously combined in immense variety, taking all cases and all phases of the multitude of cases, we get the enormously varied polymorphous symptom-groups, variably combined, or recombined, or dissociated, according to the individual cases and the times and stages at which examined.

Such neuro-mental heredity, and in cases acquirements, is, or are, clinically manifested in morbid symptoms which are the outward tokens of degrees—and variably combined in different cases, and at different phases of the same individual case—of the neuro-mental qualities of, or of some of, the following:

Instability,
Vulnerability,
Impulsiveness, or contrariwise,
Morbid torpor,
Defective mental synthesis,
Over-suggestibility, or contrariwise, degrees of
Oppositional obstinacy,
Disharmony, on the broad general lines of action, nervous and mental,
Para-rhythm : rhythmic failure on the narrower individual lines of action, nervous and mental.

Taking katatonia in the mass, we find manifestations of all the above types of departure from normal, the pathological factors being, hypothetically, excess, diminution, or perversions of internal secretions, or of metabolism generally, or ingested pathogenic microbic or other pathogenetic factors, or invading infective ones. Toxic factors, therefore, seem to be very strongly indicated.

Further evidence in favour of this view will appear, incidentally, under the next department of our subject, namely, that of the morbid-anatomy question.

(2) *Has katatonia a morbid anatomy?* Limits of space call for brevity here. Drs. Séglas and Chaslin summarise Kahlbaum's experience of conditions of general stasis of the cerebral vessels in the early stage with some serous effusion, which produces softening of the cerebral tissue, and formation of exudation on the meninges and ventricles, chiefly affecting the arachnoid, and especially found at the base of the brain. In chronic cases some shrinking of cerebral tissue, and the exudation partially organised.

"In the cases where death has occurred at an early stage the arachnoid was opaque over the pons, and the opacity extended over the cerebellum to the medulla oblongata, immediately behind the fourth ventricle. In the other cases the arachnoid was thickened in the same regions; further there was a remarkable tendency for serum to exudate in the neighbourhood of the base of the brain." . . . . "Moreover, katatonia has a predilection for the arachnoid and for the base of the brain, the exudation extending itself to the Sylvian fissure and towards the second and third frontal convolutions."

Later on, Brosius decided for three forms or divisions of katatonia:

One meningitic, of prolonged course, and on necropsy revealing residues of meningitis.

One connected with cerebral anæmia, improving with betterment of the general health.

One with marked cerebral ædema.

In *Brain*, vol. xiv, 1891, p. 99, I published the necropsy of an extremely well-marked case of katatonia, a young man who died from a severe complicated attack of influenza at the onset of a bad influenza epidemic, the nervous, pulmonary, and abdominal symptoms of influenza manifesting a very general invasion and reaction. The clinical history of this case is in the journal (*Brain*, vol. xii, 1889, p. 503).

Summary, only, of necropsy record.—Calvaria relatively very wide posteriorly, parietal eminences unusually situate very far back, and cranium narrow anteriorly, the cross section forming roughly a triangle with rounded angles, and the occipital declivity being unusually steep.

Dura mater slightly thickened; in *falx cerebri* is a small, limpet-shell-like growth of bony aspect. The dura mater lining of the front and middle regions of the base of the skull is somewhat thickened and slightly stained rusty. Arachnoid thickened over inter-peduncular space, and over the orbital surface, is unduly opaque, thickened, and tough. Some wasting of olfactory bulbs and tracts, and part of the bulbs remained adherent to the skull on removal of the brain therefrom. Over each frontal lobe tip is a cartilaginoid platelet in the pia-mater, and another near tip of left frontal lobe. Slight inter-hemispherical adhesions between the membranes of the two frontal lobes; separation of these membranous adhesions led to stripping off of a superficial layer of grey cortex at those positions.

There was some meningeal opacity on upper and lateral aspects of brain, and in these regions the pia-arachnoid was somewhat opaque, thickened, and more tough than normal, and separating from the cortex with too great ease, a little watery fluid then oozing away from these meninges.

Slight convolutional wasting over supero-lateral fronto-parietal regions.

Slight adhesion of meninges to cortex in both cerebral

hemispheres at, and near by, the anterior part of the *base* of the brain (cerebrum), on the anterior curve of gyrus fornicatus, on the marginal gyre adjoining, and on part of the gyrus rectus (orbital), and of the insula of Reil, at all of which areas the meninges (pia-arachnoid) carried away with them, when stripped off, a slight layer of the surface of the cerebral cortex (meningeal adhesions and cerebro-decortication) or, for short, "adhesion and decortication," but superficial only (chronic lepto-meningitis with superficial cerebral decortication) in patches when the meninges were removed.

Velum interpositum thickened and tough.

Microscopically, some slight or moderate changes in nerve-cells of a frontal gyre.

Some architectural anomalies, of a not uncommon type, in the form and relations of some brain gyres.

Some cases of the study of the pathological anatomy of dementia præcox (variety not mentioned) were published in 1906. It is stated that in all the cases (they were examined microscopically by the Nissl colour method) there were the well-known chronic cell-changes of Nissl, deformity of cell-contours with gradual, or degrees of, disappearance of chromophile substance and increase of "pigment depôts." In places, complete cell destruction and some thinning of the several cell-layers; with, and following which, comes glia proliferation. The cells not uniformly affected alike; the deeper layers, large pyramids, and polymorphous cells are the most affected. Blood-vessels relatively little affected, although with some pigmentary collections in vascular walls, endothelium, adventitia and peri-vascular lymph-spaces.

No characteristic histological distinctive signs were claimed as distinguishing these cases from other organic psychoses. But it *was* claimed that there was something characteristic of dementia præcox in the *localisation*, for in all cases the frontal and central regions of the cerebrum were chiefly affected by these changes, and the occipital region comparatively free.

Memorandum.—N.B.: This last localisation is nothing characteristic or distinctive; a similar localisation tends to appear in the vast majority of demonstrable brain changes found *post mortem* in the insane. From this statement I, of course, exclude some traumatic cases where the locality of the injury counts for much in localising the *post-mortem* morbid findings.—W. J. M.

As to the *pathology of katatoniform symptoms, isolated in occurrence*, or with little accompaniment by other katatonic or katatoniform symptoms, I have occasionally observed in the later or middle stages of "general paralysis of the insane" (G.P.I.), verbigeration, negativism, and emotional pathos, all of katatoniform type; one or two, or all three of these symptoms in different cases, and supervening in phases not of very long duration.

Also, one occasionally observes verbigeration chiefly and strongly expressed, but on occasions accompanied by other katatoniform symptoms lightly expressed, in cases of lesions produced by embolism, or by thrombosis, of cerebral cortex in *focus* or *foci*.

Also, automatic obedience, waxy flexibility, in cases diagnosed by others as renal disease, but only incidentally seen or examined by me.

III.

We now come to the so-called "*paranoid*" variety of "*dementia præcox*." In my article published long ago, and already mentioned, I placed katatonia near by paranoia, with its congenital bases, and early supervening form—original paranoia, this last being at that time accepted as a form of mental defect and disorder affecting early life and continuing into later periods, with mental deterioration.

The inclusion of the "paranoid" form of "dementia præcox" by the Kraepelin school raises points of difficulty. It involves a re-consideration of the whole subject of "paranoia" and of "original paranoia," "hallucinatory insanity," "confusional insanity," etc. These are not our subject to-day.

Resuming our subject: To begin with, Kraepelin *very straightly restricts* the application of the name *paranoia* to a class small in number.

Coming at a leap to Kraepelin's "*paranoid form of dementia præcox*," it is to be remarked that:

(1) The illustrative cases given also presented some hebephrenic and katatonic symptoms, and as he admitted a hebephrenic and a katatonic form, the addition of the paranoid seems superfluous.

(2) Moreover, the word "paranoid" applied to the cases is liable to become misleading in its relations and suggestions.

(3) The delusions, in the cases of Kraepelin, and by him termed "paranoid," were *totally unsystemised.* And in one especially does he emphasise the "luxuriant production of such extraordinary and constantly changing delusions," "and new extraordinary forms are always succeeding one another."

With the greatest deference and homage to the great master in clinical psychiatry, one may venture to suggest that such delusions are not well named "paranoid," and that the mere subject or dress of a delusion is not its most important character or feature. On the contrary, the mode of the psychological formation of a delusion, its degree of systemisation, or non-systemisation, and especially its actual relevant influence on *action*—the output and grade of the work of life —and on the higher adjustive adaptations which normally should guide *conduct* into sane, relevant, fruitful, beneficial, and successful paths; these are the most important matters.

(4) Hallucinations were prominent and important features in these cases, named as examples of "paranoid dementia præcox," and in one it is said, "that here hallucinations of the most different kinds play a predominant part all the time." But, according to Kraepelin's conception of it, on the contrary, in paranoia itself delusions are almost exclusively connected with real experiences mistakenly worked out. And he avers that "hallucinations never come under observation, or only quite occasionally," in paranoia; thus vividly contrasting with their luxuriance in the so-called "paranoid form of dementia præcox."

Except in mere verbal dress of some delusions—a matter of no very great consequence—the likeness is neither great nor important between "paranoia" in Kraepelin's acceptation of the word, and his own "paranoid form of dementia præcox."

I think some of his followers make this latter a too-widely comprehensive term.

Moreover, the mental symptoms even of general paralysis of the insane in a relatively small fraction of the total number of cases take on very much the same verbal persecutory depressed delusions, hallucinations, and other expressions as Kraepelin's paranoid form of dementia præcox. Yet we do not for that, or any other reason, split off a "paranoidal" dementia para-

lytica from our group of "general paralysis of the insane," *vel* "dementia paralytica."

Finally, as to classifying Prof. Kraepelin's dementia præcox and its three groups entirely by his own cases given as examples, in his *Clinical Psychiatry*, English edition, 1904, we find that all the groups, and all the cases described in each group, showed very marked *katatonic* symptoms, the only partial exception to this being a case of hebephrenia, chiefly; but obviously possessing also decided katatonic features, and in process of graduating into katatonia.

Besides katatonic symptoms there are, in at least the very great majority of the cases, some symptoms usually assigned to hebephrenic mental disease.

These two sets of symptoms are fundamentally intermixed, more or less, in all the three groups into which dementia præcox is divided, the hebephrenic tending to graduate into the katatonic, and the katatonic taking, in a very striking manner, by far the major importance by their rich variety and number of phases and combinations of almost kaleidoscopic changeability at some times, or in some few examples; therefore more leisurely transformation in most others; and thus forming the central, or main, constituent group of so-called "dementia præcox," and blending naturally with the group possessing marked hehephrenic features and a tendency to merge in katatonia.

Let it be added that the chapter in Kraepelin's *Clinical Psychiatry* on "The Final Stages of Dementia Præcox" is devoted *to three cases*, admirably described; but instead of each case being an example of the final stage *of its own form, viz.*, *one* case hebephrenic, *one* katatonic, and *one* paranoid, *all three are essentially* examples of the later and final stages of *katatonia*—another tribute to its clinical wealth and great predominance on which I have insisted.

To clinch this part of the subject it is also to be mentioned that in the lectures of Prof. Kraepelin already quoted, the three cases, detailed as examples of his *paranoid* form of dementia præcox, all manifested strong characteristic symptoms of *katatonic*, and partly *hebephrenic type*, *plus* totally *un*-systemised delusions with many hallucinations, the delusions being of depressed, or of expansive type, or of these intermixed.

Therefore, one may claim them as examples exhibiting the

katatonic type to a very large extent. They are taken by the Kraepelin school as manifesting a blending of clinical type with that of paranoia; by the katatonic and hebephrenic elements from strains of the same general heredity as the cases of the other groups.

Taking the whole of dementia præcox as described, that is to say, as a group of sub-groups (hebephrenic, katatonic, paranoid), katatonia is by far the predominant constituent element.

If so, why should not *the name for the whole group* express that notable predominance, especially as hebephrenia often tends to graduate into katatonia, and may do so?

Why not *katatonic insanities*, or *insanities group*, or *katatonic insanity*, or *katatonic dementia* (or *deterioration*), for short? And this subdivided for more minute study, if desired, into several subgroups.

For, whether so-called dementia præcox is taken as constituted of two or of three groups, katatonia is the one which is predominant.

The Bacteriology of the Cerebro-Spinal Fluid in General Paralysis of the Insane.

By W. FORD ROBERTSON, M.D., Pathologist to the Scottish Asylums, and R. DODS BROWN, M.D., M.R.C.P.Ed., D.P.H., Assistant Physician, Royal Edinburgh Asylum.

IN recent years very numerous observers have endeavoured to ascertain if, in cases of general paralysis, micro-organisms can be demonstrated in the cerebro-spinal fluid withdrawn by means of lumbar puncture during life. All, with one or two exceptions, have obtained negative results, both from direct examination of the centrifuge deposit and from cultures, and the very general conclusion has consequently been formed that no micro-organisms are present.

The positive results that have been obtained are extremely few in number. In 1897 Montesano and Montessori (1) made cultures from the cerebro-spinal fluid of eleven cases of general paralysis and obtained positive results in eight. Among the micro-organisms obtained were streptococci, staphylococci, sarcinæ, and a bacillus which they termed the *Bacillus viscosus*.

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