

distilled water, alcohol was added, and the precipitated proteid centrifugalized and examined with negative result. A portion of a pleural effusion was placed in 0.2 per cent. solution of ammonium oxalate (prepared with the laboratory distilled water), centrifugalized and examined with negative results. A bile-blood culture from an obscure case of remittent continued fever, in which tubercle-like bacilli had been found previously, was centrifugalized and examined. Five suspicious bodies were found, but they were atypical and indefinite.

It was my intention to review the work with water and solutions assuredly bacteria-free, but circumstances at that time and since have prevented. When Rosenberger's first article appeared three months later, however, I selected a positive case of pulmonary tuberculosis and examined the blood by his method, using my old laboratory distilled water in making up the citrate solution and in laking the blood on the slide. I had no difficulty in demonstrating acid-alcohol-resisting bacilli.

I then made three thick blood smears directly on glass slides, laked the blood with the laboratory distilled water and examined them. The first two smears were negative after a thirty-minute examination of each, but in the third I found fifty-seven tubercle-like bacilli in fifty-five minutes. This seemed to be very conclusive, for absolutely the only source of contamination had to be the distilled water which was allowed to dry on the smear after laking the blood. But, my confidence in distilled water having been shaken, I examined with egg albumin the small sediment that had formed and found considerable numbers of acid-alcohol-resisting bacilli.

The identification and description of this organism and the method of contamination remain for further investigation. It is probable that they belong to the grass bacilli. Guinea-pigs were kept in the laboratory where my water was distilled and kept, and the Canal Commission water was delivered in tanks drawn by horses. In both instances it is not very difficult to see how contamination might have occurred.

It seems probable, also, that contamination of distilled water with acid-fast organisms does occur frequently in all laboratories where animals are kept. Recently I have had an opportunity to examine the distilled water of a laboratory in the State of New York. Animals are kept in the basement of this laboratory just beneath and communicating with the room where water is distilled and kept. The still is a Jewell Automatic, and the glass reservoir for distilled water is constantly connected with the still by means of a rubber tube passed through a cotton plug. Acid-alcohol-resisting bacilli were demonstrated in the small quantity of sediment in the reservoir. In a second laboratory, which is on the third floor of a building, in the basement of which animals are kept, no tubercle-like bacilli were found in the distilled water, but there were present acid-semifast (Piffard) spore-like bodies which might have caused some uncertainty if present in suspected specimens.

Rosenberger makes the following statement:

In the investigations I used sodium citrate solutions made at five different institutions. Some of the spreads were made in one laboratory and laked and stained in another. . . . The solutions of sodium citrate and ammonium oxalate were sterilized by the autoclave or steam sterilizer. . . . Spreads made from the sediment [italics mine.—W. V. B.], which occasionally took place in the citrate solution failed to show any so-called citrate bacilli.

Rosenberger fails to state explicitly whether or not a thorough search for acid-fast bacilli in the citrate and

oxalate solutions and in the distilled water used in laking the blood was made by fixing the sediment with albuminous material. This procedure in technic is the crux of the whole matter. One result of his animal experiments, 30 guinea-pigs showing acid-fast bacilli in the blood suspensions while having no tuberculous lesions, is strong evidence in favor of contamination rather than of the presence of tubercle bacilli in the circulating blood. Had he examined the blood of these guinea-pigs *before* inoculation, as was fortunately done in my series, his results would probably have been the same. Evidence in favor of Rosenberg's view, however, is furnished by his negative autopsies on seven bodies whose blood suspensions during life had been negative for acid-fast bacilli. But it is only necessary to refer to the almost convincing coincidences of my own work to indicate that "experience is fallacious and judgment difficult."

SUMMARY

1. In examining blood, urine, stools, sputum and exudates for tubercle bacilli, the greatest care should be used to exclude contamination of water and all solutions used with members of the acid-resisting group of bacilli (whether dead or alive).

2. In this investigation, coincidences occurred which were all but convincing of the presence of tubercle bacilli in the blood in every case of tuberculosis.

3. Animal experimentation was negative, but the quantity of blood used for inoculation was too small for the results to be of great value.

4. Acid-alcohol-resisting organisms were found eventually in fresh distilled water furnished by the Isthmian Canal Commission, in tap water, in old distilled water made with care in the pathologic laboratory, and in all solutions made up with the Canal Commission water. These bacilli were either dead or non-pathogenic to guinea-pigs.

5. There is as yet no conclusive proof of the frequent continued presence of tubercle bacilli in the circulating blood.

I wish to express my thanks to Col. W. C. Gorgas for permission to publish this report, and to Dr. Williamson, pathologist, and Dr. Glines, in charge of the clinical laboratory, for their interest and assistance in the work.

MEDICAL VERSUS LEGAL RESPONSIBILITY *

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PHILADELPHIA

Among the various problems of human activities there is none more important than the relation of mental state to responsibility. The idea of human liberty and responsibility forms the basis of the penal system. This principle has been recognized by law as indispensable in order to assure the working of social discipline. The doctrine of liberty is old and in its crude form is accepted now, but modern science, based on accurate clinical and experimental methods, has helped to modify to a great extent the fundamental features of the old conception of liberty and responsibility. Mental medicine, through its more elaborate classifications and its continuously widening field of investigations, has revealed new pathologic manifesta-

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tions and types which previously had not been suspected. Normal and pathologic psychology in its turn has availed itself of these discoveries and assisted in throwing light on the obscure problems of personality, memory, volition and reason. The conclusions of modern science lead to a broader and more humane consideration of human responsibility. The old traditions and the material interest which are threatened are not the only elements to be considered. The individual himself, his most intimate and most profound beliefs, the principles of his life in all its manifestations, in the domain of his individual consciousness as well as in their application to social discipline—all these questions are taken into consideration by modern science in its effort to arrive at a proper appreciation of mental responsibility.

Unfortunately the new investigations do not always bear the fruit which could and should be expected. One of the principal reasons is the fact that the studies of the subject are ignored by those who create the laws and those who administer justice. They view exclusively the social side of the law and are not at all interested in psychologic and medical studies which present a different concept of criminality and of the criminal himself. It is true that penal legislation and legal medicine are distinct and separate sciences, but positive criminology must rely on both branches of human knowledge. An intimate unity of these two sciences is an indispensable and an essential condition of progress. Mathematics is a rational science, physics is an experimental science; a union of the two helped to reveal the essential phenomena of matter. Chemistry and medicine are also distinct sciences, but Pasteur's work built the bridge between the two. Psychology finds its elements in mental pathology and physiology. Modern philosophy is bound to look for assistance in medical sciences.

Criminology has for its object the formation of positive laws concerning crimes and the discovery of remedies for them. With this object in view it searches the truth wherever it can be found and takes from medical and legal sciences data which it needs to form a scientific foundation. By the union of the two sciences the old and too narrow boundaries of human conception of liberty and mental responsibility will be broken and progress will be assured.

An attempt in this direction is presented in the present essay, which is based on a personal experience in the courts of the State of Pennsylvania.

In a number of instances of civil and criminal cases in which the question of responsibility was involved the main issue consisted of the test of "right and wrong." Every other element has been invariably eliminated by the skilful attorneys and even by some judges. It seemed in many cases that the criminals' legal knowledge of right and wrong was all that was necessary for determining the question of whether they were mentally responsible or not. The expert has not been permitted to enter into any explanation and to refer to any facts of the criminal's life, character, demeanor or to facts of marked hereditary nature indicating abnormality of mental processes or insanity, feeble-mindedness, imbecility—all showing complete or limited responsibility. Mentally abnormal individuals, as we shall see later, may know the distinction between lawful and unlawful acts and still be not mentally responsible.

The first test of wrong and right was proposed in 1843 by fifteen judges in England. It appears in the phrases "unable to distinguish right from wrong," or

to discern "that he was doing a wrong act," or was "ignorant that he was committing an offence against the laws of God and nation." In 1846 Chief Justice Gibson, of Pennsylvania, said:¹

A man may be mad on all subjects; and then, though he may have glimmerings of reason, he is not a responsible agent. This is general insanity; but if it be not so great in its extent or degree as to blind him to the nature and consequences of his moral duty, it is no defence to an accusation of crime. It must be so great as entirely to destroy his perception of right and wrong, and it is not until that perception is thus destroyed that he ceases to be responsible. It must amount to delusion or hallucination controlling his will, and making the commission of the act in his apprehension a duty of overruling necessity.

Speaking further on partial insanity, the judge remarks:

Insanity may be confined only to one particular subject, and then the individual continues to be a legitimate subject of punishment, although he may have been laboring under an obliquity of vision; a man whose mind squints, unless impelled to crime by this very mental obliquity is as much amenable to punishment as one whose eye squints.

Afterward in 1858 the judge said:²

So far as the act is concerned, insanity must be so great in extent and degree as to blind him to the natural consequences of his moral duty and must have utterly destroyed his perception of right and wrong.

The legal conception of insanity as defined in these few examples had such a strong hold that it could not be shaken. It continued to form the basis of decisions and rulings in subsequent cases.

In spite of advancement of scientific research in the field of mental science and psychology, the results are totally or greatly ignored by some jurists. In many instances they continue to follow the old traditional path, no matter how unscientific, irrational and inhumane the test of right and wrong may be.

In discussing the various forms of mental disease we shall see that a person in committing a crime may realize the enormity and the lawlessness of the act and still be irresponsible for the act. The so-called moral insanity presents the most striking example of impracticability of application of the generally accepted test. Here the abnormal moral conceptions, the extraordinary propensities, eccentricities, the abnormal conceptions of obligations, etc., may be present a long time together with the proper conception of wrong in a criminal act. Shall such an individual be considered entirely responsible?

In sane life the knowledge of right and wrong is not the only factor that affects the free choice of our actions. We have to count also with impulses, with powerful motives. The power of restraint is in a certain relation with ideas and feelings which are opposed to the impulses. Will-power may suppress the latter. Will-power depends on the power of deliberation and self-control. The latter two factors differ immensely in various individuals. In normal life consequently an overwhelming pressure of external circumstances may sometimes and in some individuals remove to the background and even check completely the power of restraint or of self-control, although the distinction between right and wrong is totally preserved.

The pathologic states of mentality are characterized precisely by a more or less marked diminution or even complete abolition of the power of deliberation, of will.

1. *Commonwealth vs. Mosier*, 4 Barr. 264, 1846.

2. *Commonwealth vs. Ferth*, 3 Phila. 105, 1858, per Ludlow, J.

of self-control, and yet the ability of understanding that an act is morally wrong or forbidden by law may be present in its integrity.

Let us, therefore, consider in detail the various forms of mental abnormality in connection with the principle of right and wrong.

In melancholia, homicide occasionally occurs. The individual kills because he does not wish the victim to suffer through his sins. The delusion is usually intensified by hallucinations and the latter hasten the act. Here an insane motive prompts the action and the morbid condition has affected the mind generally so that the impulse of action is derived from the state of feeling and thought. The distinction between right and wrong is impossible.

In mania all the functions are exalted and there is more or less marked diminution of controlling power, so that even slight stimuli may lead to intense actions. In ordinary cases the intellect is not affected and the individual committing an unlawful act may know perfectly well the significance of the act and still, because of the decrease or complete disappearance of inhibition power, which forms the essential characteristic feature of the disease, the impulse is overwhelming. It is, however, true that in pronounced cases or in chronic cases there is an intellectual weakness and a confusional state so that the maniacal patient is then incapable of understanding the nature of his acts.

In no form of mental disorder can the legal test of right or wrong lead to more errors than in a certain class of paranoia. In the hallucinatory variety of this psychosis the impulse to poison, to kill, to massacre, to persecute is prompted by the hallucinatory images and the power of discriminating between a lawful and unlawful act is distinctly abolished. In another variety of paranoia, the individual is to all appearances a reasonable being, capable of comprehending an ordinary conversation, capable of discussing various subjects, and still on one particular subject his judgment is paradoxical and abnormal. He may then fail to exhibit in a long conversation evident signs of mental derangement until the subject of his main or only delusion is touched on. This is the so-called "partial insanity." Jurists and laymen then say that that individual's insanity is confined to a particular subject, the man being sane in every other respect. Sometimes they say that the man's criminal act is only the expression of depravity or of passion which in their eyes does not appear to differ materially from those of sane men and consequently the criminal impulse is simply an incident in the life of a sane man who is expected to overcome it. Such an individual, in spite of his apparent sane demeanor and attitude not infrequently labors under a special and fixed delusion which he conceals quite skilfully. He silently contemplates revenge and in the most careful and deliberate manner he plans its execution. The criminal knows perfectly well that he is committing an offence against the law and that he may be punished, but his act is prompted by an irresistible impulse which is the direct result of his delusive ideas. In this class of cases one must consider the true factors affecting the criminal act, viz.: the delusion, the defective power of inhibition and the abnormal feeling. These are the only elements that affect the power of free action. They alone must be taken into account in our attempt to appreciate a paranoiac's action. The legal view is totally inadequate and narrow, as alongside of those morbid elements the realization of an unlawfulness of an act may be well preserved.

In general paralysis of the insane the question of responsibility may come up during any of the periods of the disease. When the dementia is pronounced, there can be no doubt as to the patient's incapacity of distinguishing wrong from right. But before mental failure becomes accentuated, the individual may present only peculiarities of conduct, tendencies to deception, fraud or theft, extravagant mode of living, suspicious relations to his surroundings and in addition to this some physical signs also—all showing clearly the development of paresis. While committing an unlawful or criminal act the patient may be fully aware of the illegality of such act and of the consequences he will have to suffer for such an act; nevertheless the man is insane in the true sense of the word and the criminal act itself, as well as the above abnormalities of disposition, character, conduct, is an early sign of the disease. If the test of right and wrong is strictly applied to such cases, the man must inevitably be punished and when the crime is assault and murder he will be hung or electrocuted. Such a procedure is unquestionably a miscarriage of justice and essentially inhuman. A parietic at any of the phases of his disease is insane: his power of control, his feeling, his deliberation are fundamentally defective, abnormal and consequently his acts are the result of sudden morbid impulses. These are the immediate causes of his irresponsibility, but not the legal principle of right and wrong. Illegal acts are sometimes the first manifestations of the disease and the peculiar features with which they are sometimes surrounded lead us to the right road for a diagnosis.

Senility is not necessarily a cause of irresponsibility. Many individuals preserve the integrity of mental faculties until a very old age. When the senile involution has progressed so far as to abolish completely the faculties, all responsibility disappears. But the involution may be slow, irregular and at the same time progressive, and in such cases there may be a long phase during which the moral conceptions, obligations, the sense of propriety, affection may gradually undergo radical changes so as to lead to most unexpected acts. A senile dement, no matter how slight his dementia may be, is apt to commit the most extraordinary acts. In making a will, for example, he may be guided by petty motives which are easily aroused; anger, desire for revenge, jealousy can be stimulated with the greatest facility, and a will signed by a senile dement may express the most extraordinary, most unjust, most inhumane wishes. As he is easily influenced, he may change his will at each change of his humor. In spite of this variability of actions, he may be fully aware that he is doing a wrong act. He may fully realize the injustice done to persons whom he deprives of the worldly goods and he will, therefore, be legally responsible. The test required by law is positive here, but is it just? A senile dement is in a pathologic state; he is insane in the most proper sense of the word. Scientifically he can not be considered responsible, and consequently by relying exclusively on the classical legal test, injustice is easily done.

Let us now turn our attention to the application of the legal test to the question of responsibility in individuals with congenital mental infirmities. The subject is a very important one, as we deal here not with insanity or qualitative changes of mind which are acquired in adult life, but with quantitative deficiencies inherent to the individual. To this group belong idiocy, imbecility, feeble-mindedness and a host of intermediary, transitional varieties. To this group belong also the deficiencies of a large class of neuropathic individuals.

who present during life episodic psychasthenic manifestations, such as 'phobias, obsessions, abulia, *folie de doute, délire de toucher*, etc.

The idiot and the low-grade imbecile can not be expected to realize the enormity and the lawlessness of a criminal act, but when an attempt is made to apply the classical legal test to cases of milder intellectual weakness, to the large class ranging between imbecility to simple backwardness, one is bound to appreciate its inapplicability.

This class of individuals present, besides a certain degree of intellectual inferiority, a certain inaptitude to acquire knowledge, to perform mental operations of a more or less complex nature, but also and particularly an inherent deficiency of inhibitory power. Their whole existence is composed of incidents of an instinctive nature, as the instinct predominates in them and, therefore, their actions are invariably the result of impulses. Some of these individuals may be fully aware of the illegality of a certain act, they may fully realize that murder, assault, arson, deception which they sometimes commit are morally wrong and punishable by law, and yet they can not for the above reasons be held totally accountable for their actions. Is it an act of judicial wisdom to hang or to send to the electric chair or else imprison for life, if they have committed capital crimes, individuals who present an arrested mental development of various degrees, also the so-called peculiar, eccentric, queer individuals, those who present episodically during life obsessions, 'phobias or other deviations from normal cerebral functions—otherwise speaking individuals with an abnormal psychic make-up, although not insane in the proper sense of the word—is it, I say, an act of justice to consider them completely responsible and consequently inflict a corresponding severe punishment for only this reason, that they can discriminate legally wrong from right?

Régis has recently said:

Mankind unfortunately can not be divided from a psychologic standpoint into two distinct categories, viz., one side mentally sane or totally responsible and on the other side, insane and totally irresponsible. Between the two there is a large province, the so-called intermediary zone populated by individuals tainted in various degrees and consequently presenting very different degrees of responsibilities. Although it is impossible to measure the latter by millimeters, it is nevertheless possible to establish for them from this standpoint an ascending or descending scale and consider quite precisely three progressive degrees, viz., slightly, sufficiently and very largely limited responsibility.

The group of cases which I have just discussed is, scientifically speaking, composed of individuals whose responsibility can by no means be total; it must be limited. The latter is not a subterfuge of the expert, but a scientific fact established on scientifically accurate clinical observations which can not be denied. It is, therefore, evident that the legal test of wrong and right can not be applied to those cases, and if it is applied, as it is frequently done, the results are bound to be disastrous as far as the administration of justice is concerned.

Mental disturbances caused by intoxication with alcohol, opium and other poisons deserve some consideration with regard to the medicolegal test. Alcohol is a very powerful etiologic factor of criminality. One may say that it plays a very important rôle in the majority of committed crimes.

When a crime is committed by an individual while in a state of intoxication, several possibilities must be con-

sidered, viz.: whether the intoxication occurred in an individual with a pre-existing mental affection or without it, also whether the intoxication was intentional for the purpose of committing the crime during that state. It stands to reason that the delirious or confusional or stuporous states caused by an intoxication *per se* render the affected person irresponsible. It is impossible to expect from an acutely intoxicated individual a clear conception of right and wrong. His reasoning, judgment and discrimination are qualitatively and quantitatively disturbed. If, however, the test of right and wrong is the legal criterion of responsibility or irresponsibility, grave mistakes must be committed; a criminal will become intoxicated intentionally and then claim excuse for his act in the drunkenness; if he is acquitted or only slightly punished on that ground the community will suffer an injustice. On the other hand, an inability to distinguish right from wrong means insanity from a legal standpoint. A man who became incidentally intoxicated can not be considered insane and committed to an asylum. It is, therefore, evident that from every standpoint in such cases the law can not rely on its classical test in determining the question of responsibility.

Chronic intoxication (alcoholism, morphinism, etc.) are characterized chiefly by a gradual progressive mental enfeeblement. But before the latter becomes pronounced there may be evident changes in the affective sphere of life. Irritability, susceptibility, outbreaks of anger, indifference, loss of affection for the near and dear ones—may all be the initial symptoms. These manifestations may be more pronounced than the intellectual enfeeblement which in some cases progresses very slowly. Crimes or any illegal act may be committed during any of the phases of chronic alcoholism, morphinism or other intoxications. They may, therefore, occur at a stage when, in spite of the gradual deterioration, the faculty of discrimination is preserved to a more or less sufficient extent so as to know that his acts are wrong or right. Nevertheless the individual is in a diseased condition, his organs and tissues are undergoing degeneration. His demeanor, attitude, relation to others, show that his volition suffers, his power of inhibition is deficient. Such an individual, even with preservation of a large part of the faculty of discrimination, can not be held totally responsible. The legal test applied to such cases will naturally lead to a miscarriage of justice. Chronic alcoholism, morphinism or other intoxications at any of their phases are veritable diseases requiring medical supervision.

A very important and serious problem confronts alienists and jurists in deciding the question of responsibility of a person during the state of lucid intervals. For the purpose of simplification I embrace under this term intermissions, viz.: apparently normal intervals between individual attacks of a certain mental affection; also brief periods of apparent lucidity of mind occurring in the course of any psychosis, finally the remissions, viz., an attenuation of symptoms for a more or less long period.

A question arises: How much is the legal test of wrong and right justifiable in cases of criminal acts committed during lucid intervals? There can be no doubt that at that time the discrimination between lawful and unlawful acts is possible; consequently should the individual's responsibility be then considered complete?

A person once affected with acute melancholia or acute mania may have recurrences at intervals of

months' or years' duration. The question is whether the person thus affected can be considered as entirely cured during those intervals. Experience teaches that the degree of recovery and its duration are variable. When we are in presence of an individual with a history of several attacks of a certain mental affection, who has just recovered from one, perhaps to enter another, and who happened to commit a criminal act during the interval—are we justified in considering him completely normal and perfectly responsible only because he is able to realize legally the criminality of his act? The fact of his being repeatedly subjected to attacks of mental derangement, even at long intervals, is a proof of the individual's mental and moral make-up being abnormal and pathological. These remarks are particularly applicable to the lucid moments proper, which occur in the course of a certain psychosis and which are brief or very brief in duration. Such lucidity is only ephemeral, more apparent than real. A civil act such as a will, for example, executed or altered during the lucid interval, should not be considered valid, in spite of the individual's knowledge of the wrong he did to those who are the interested parties.

During remissions, particularly those of paresis, various degrees of improvement are observed in the mentality. The improvement may in some cases be so marked as the patients appear perfectly normal. But it must be borne in mind that a remission is only a temporary amelioration of the psychic manifestations, but in no respect a recovery. In paresis, for example, alongside of apparent lucidity of mind, all or some of the sensory and motor symptoms of the disease, always persist. The disease is essentially progressive and not curable, in spite of great improvement that may occur in the psychic sphere. If, therefore, an illegal act is committed by a parietic during a remission, when he is able to distinguish between right and wrong, should he be considered as a normal individual and consequently held totally accountable for his act? From a physiologic standpoint a parietic is at no stage of his affection responsible, and if the legal test is applied to him he must be imprisoned and severely punished. Such a procedure is certainly a miscarriage of justice, as parietic must be housed in asylums or hospitals instead of in prisons.

There are two other affections in which the legal conception of right and wrong, when applied during apparently lucid intervals, may lead to disastrous consequences. I mean dipsomania and epilepsy. As it is well known, the first is characterized by an episodic irresistible desire to absorb alcohol. The dipsomaniac in the early stages of his infirmity presents apparent lucidity of mind and control of his faculties between the attacks of craving for drink. Dipsomania is always the result of a chronic use of alcohol. Whether in its early or later stages, it is a diseased condition and impulsive acts of any nature are likely to occur in such individuals. It is true that in an advanced period there is marked intellectual enfeeblement. In earlier stages the power of reasoning is sufficient for a realization of the criminality of an act, but, being affected by a malady which interferes with his normal life, although paroxysmally, such an individual can not be considered totally responsible; the responsibility is naturally only limited. The legal test consequently is not applicable to cases of this nature; if it were, the prison or gallows would take the place of hospitals. A dipsomaniac's chief characteristic is a pathologic state of inhibitory power.

Turning our attention to epilepsy, we find that the legal application of the usual test encounters some difficulty. In epilepsy a convulsive attack may be followed by an impulsive act of which the patient has no recollection; and then an epileptic seizure itself may consist of intellectual disturbances instead of the habitual muscular manifestations; instead of convulsions there may be unconscious aggressive acts; the patient may steal, rob, attack or kill. The irresponsibility in such cases is, of course, absolute. But when violent acts are committed by epileptics in the lucid intervals between the seizures, viz., when they are capable to appreciate the lawlessness and the consequences of such acts, the legal test of right and wrong appears to be the proper test. Nevertheless, if we consider the permanent state of morbid irritability which renders epileptics more than normal individuals predisposed to outbreaks of anger, of violence (and this is particularly true in cases with frequently occurring seizures); if we also consider that fact that the majority, if not all, epileptics are neuropathic individuals whose unstable nervous system is predisposed to various functional nervous disorders, we can conceive that epileptics between the seizures are only incompletely accountable for their acts; their responsibility must necessarily be limited and a strict application of the legal test is not an act of justice.

CONCLUSIONS

The foregoing review of various mental abnormalities leads directly to this deduction that in cases of insanity or other forms of mental deviation there may be a fair understanding of a morally wrong or right act and of a legal or illegal act, and yet there may be a pathologically insufficient controlling force. Every student of psychiatric problems, every psychiatric clinician knows that these two conditions may coexist, and the absence of the first does not exclude insanity or other psychic abnormality, and consequently does not exclude irresponsibility. Indeed, in some cases the absence or diminution of the faculty of inhibition predominates in the mental picture—or forms the entire symptomatology of the disease. The deviation in the manner of thinking, feeling and acting may not be present in its entirety, but may be dissociated in its original elements. The insane or abnormal feeling is just as important as the insane or abnormal thinking. In a large number of cases the change of feeling may for a long time be the earliest or the only manifestation of disturbed cerebral functions and this morbidly altered feeling may be the direct motive for abnormal or criminal actions. Intellectual capacity alone, therefore, can not constitute a proper criterion in consideration of criminal acts, and if the legal test refuses to take into account anything else but intellectual capacity it is radically unscientific and can not properly serve the ends of justice; judicial errors will invariably occur. The whole problem of a test in such cases depends, therefore, on the acceptance of the scientific data accumulated and elaborated from a large number of clinical observations.

To diagnose a mental malady special knowledge is indispensable. The latter is absolutely necessary for the proper appreciation of those cases in which illegal acts are committed by individuals, with all the evidences of reasoning, premeditation and reflection, who are nevertheless lunatics or otherwise mentally abnormal. It is indispensable because sometimes alterations in the psychic sphere are apparently very slight and yet are in reality considerable but concealed. It is indispensable

because discovery of important elements for appreciation of certain crimes which are peculiar or unusual in their nature can be made by men who have had a special experience in psychologic analysis. Examination of these cases must be made not only in relation to the circumstances which preceded, accompanied or followed a certain lawless act, but also and particularly in relation to the entire previous and present medical history of the individual himself in all its minutest details, as they all are important in appreciation of his mental make-up. Every clinician is well aware of the importance of all these details. Reliance on one clinical element at the exclusion of all others is contrary to the scientific spirit. Adherence to such a procedure must invariably lead to errors, and this is especially observable in cases in which mental operations are involved. The law that holds a person accountable for his acts only on the basis of discrimination between right and wrong is wholly inadequate, because it is not based on accurate data gathered from clinical experience. The jurist must cooperate with and, I should say, almost entirely rely on the alienist. But the latter must be given the greatest latitude in presenting all the details concerning the medical history of a given case. Under no consideration should he be restricted to limit his opinion as to the exclusive right-and-wrong test. If the expert is ordered to confine himself exclusively to the determination of whether the accused individual is capable of distinguish legally right from wrong, he is then forced to omit extremely important facts which, as we have seen above, constitute sometimes real elements of alienation. Thus a lunatic, in the proper medical sense of the word, will be condemned while in a state of irresponsibility.

Personal experience in the courts of Pennsylvania has convinced me that this test is very strongly adhered to in the majority of instances. In view of our present knowledge of normal and pathologic processes in the psychic sphere, in view of our experience in the manner and methods of the proper appreciation of abnormal mental operations, in view of the evident injustice that may be done to some individuals who are rather subjects for treatment in hospitals than to be placed in prisons and considered as criminals—for all these reasons I believe a revision of the old classical test of right and wrong is strongly required. A combined effort of medical and legal experts must be made for mutual enlightenment on this important subject and avoidance of the repetition of grave errors of the past will thus be accomplished. Human liberty and responsibility are two most serious elements of life that can not be dealt with in a purely technical manner. They must be viewed from the standpoint of the broadest principles governing the interrelation between the individual and the community.

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ABSTRACT OF DISCUSSION

DR. CHARLES W. HITCHCOCK, Detroit: I had occasion during the past year to review the laws of a number of our states regarding the matter of mental responsibility and in the ultimate analysis it seems to me that a great loophole is afforded to the insanity defense by the breadth of the laws, which almost uniformly permit any proof of insanity as an adequate defense for crime, instead of going further and inquiring not only whether the prisoner is insane, but whether he is so insane as to be irresponsible for his act, and is his act in any way the direct fruit of his insanity, if that be proved.

DR. A. C. BRUSH, Brooklyn: The question of impulsive acts in insanity is one of grave social importance. It is held in the laws of the state of New York, 157 N. Y., by Justice O'Brien,

that, although there may be such a form of insanity recognized, that the patient knows the nature of his act and deplores and fears its consequences, yet he is impelled by an impulse over which he has no control to perform the prohibited act. Whatever authority there may be in medicine there is none in law, and that is a wise decision from a sociologic standpoint; otherwise any prisoner might claim that he had an irresistible impulse to commit crime, and consequently society would be at the mercy of the criminal. It is not the fault of law, but the fault of medicine primarily. So long as we can not define insanity, can not define a dividing line between the sane and the insane, for there is none, the law must have some standard to set up for the defense of criminal cases, and that standard is still the old wild beast theory, and it must remain so until medicine evolves some more modern standard. Lawyers and judges are perfectly willing to accept any new standard if we can furnish it; but as yet we have failed, and until that is done, until we ourselves can evolve some more carefully and clearly defined rule, the present one must prevail.

THE STABILITY OF TYPE OF THE TUBERCLE BACILLUS

A STUDY OF THE TYPE OF CULTURES FROM OLD CUTANEOUS TUBERCLES OF BUTCHERS *

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It is now generally conceded that the tubercle bacillus of cattle at times incites tuberculosis in man. This conclusion has been definitely established only through the possibility of distinguishing between a bovine and a human type of bacillus, and through employing this method and isolating the bovine type of organism from human tuberculous infections. The studies thus far carried out in different countries, using the same methods of differentiation, agree in charging the human bacillus with a marked preponderance of infections. In this connection, however, there is one disturbing criticism that is now and again brought forth to shake the confidence reposed in these conclusions, based, as they are, on the differentiation of the types of bacilli. It is asserted by some capable workers that it is possible for the bovine bacillus to be so altered by years of sojourn in the human tissues that its essential characteristics become altered and it simulates the human type of bacillus. Without doubt, if this metamorphosis can readily take place, some of those infections which we now believe to have been of human origin may well have had their source in bovine infections of years ago, and it is to no purpose to designate them as human. In fact, if this be so, the entire method of differentiation which has accomplished so much in the past decade, and promises so much more in the practical and theoretical study of tuberculosis, would have to be regarded as not only unreliable, but misleading.

The main difficulty in studying this question in man is that we are rarely certain of the nature of the original infection and accordingly can not judge of the change of type. Our main reliance is generally circumstantial evidence. An exception to this rule, however, is furnished by those few cases of inoculation tuberculosis in which the bovine source of infection is definitely known. I have with difficulty found two cases of this nature, both in slaughter-house workers, and report a study of them coupled with some other experiments relating to the stability of the types of tubercle bacilli.

CASE 1.—This man had been employed in his present trade for seven years. Four years ago, while slaughtering an animal,

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