

will enable us to prevent the importation of syphilis from abroad; and second, we want a system of sanitary inspection and control which will enable us to take charge of the subjects of syphilis at home, and prevent them from spreading it through the community."

The profession is undoubtedly unanimous in regard to the desirability of having such a restraining influence upon syphilis as is indicated in the quotation given, and the only question which arises is as to the best method of carrying the same into effect.

If syphilis were first recognized as one of the great contagious diseases against which it is the duty of the Government to protect the community, the details of operation would probably follow in time, and as the public became aware of the dangers from the disease and the benefits accruing from its restriction, there would be no difficulty in securing proper laws relating to the subject.

It would be out of place here to present any detailed plan of operation, for the subject is of such vast magnitude and importance that it could not be compassed within the limits of this address, even if the writer were possessed of sufficient knowledge and judgment to formulate such a scheme. The suggestion, however, is most earnestly put forward that the time has certainly arrived when the evils resulting from syphilis should be fully recognized and the proper measures taken for its restriction. No longer looked upon as a purely venereal disease, it should be placed under the control of the proper health authorities, and it should be regarded quite as criminal to transmit syphilis knowingly as it is to communicate small-pox, scarlatina or diphtheria. It would then become the public duty of each and every one to guard against the malady, and its spread would be proportionately restricted. The hotel proprietor who knowingly allows one with small-pox to infect others, or who should not exercise due precautions after such a patient had occupied a bed or room, would receive punishment; and I take it that the keeper of a brothel would be subject to like punishment in regard to the careless spread of small-pox, scarlatina or diphtheria. If, now, syphilis were included with these maladies, something would be accomplished toward checking the extension of the disease. Such a person would then see that all the inmates of the house were free from syphilis and, again, would be very careful that no one entering the house should introduce the disease,

That a person may be held liable for communicating syphilis is abundantly shown by the many cases occurring in the literature of foreign countries. The works of Tardieu,¹⁴ Fournier,¹⁵ and others, are full of accounts of legal actions taken and fines and imprisonment inflicted for the wilful or

careless transmission of syphilis, and in some instances those actions were against physicians who had exercised precautions against the same.

How far the matter can be carried in regard to the restraint of syphilitics from exposing others cannot now be stated or even judged. Much enlightenment of the community is yet necessary in regard to the subject, and much thought will be requisite to determine exactly the best methods of controlling the slow but steady extension of the disease which is now taking place. These matters can safely be left for future consideration, after the first step has been taken in regard to placing syphilis among the other contagious diseases which are dangerous to the life and health of the Nation and of individuals. When syphilis is less frequent as a *venereal disease*, the cases of *non-venereal* or innocent syphilis will become proportionately rare.

EXPERT TESTIMONY AND MEDICAL EXPERTS.

Read before the Section on Medical Jurisprudence at the Thirty-ninth Annual Meeting of the American Medical Association, at Cincinnati, May 9, 1888.

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At the Hertford assizes (1699), in the trial of a man accused of murder, the prosecution—as stated by Mr. Justice Stephen, in his learned history of the criminal law of England—"collected a body of doctors to substantiate the proposition propounded by the crown." This case, says the historian, "supplies nearly the earliest instance of a trial depending largely upon the evidence of experts." It is further said, however, by the learned author—and the fact is significant if well considered—that "the defendant contradicted the evidence of the experts in a way that still shows any one who reads the case, that he was fighting with a perfectly idle superstition."

It is a fact conceded by English law-writers, and indicated by the asperity of medical writers towards them, that English judges have never held medical experts, especially in cases of insanity, in high estimation; while in this country the fact is patent to all interested observers, that the testimony of medical experts exercises but little influence in determining verdicts, when not in harmony with popular sentiments, or notions, respecting the merits of any given case.

In view of such facts, may it not be well to consider, briefly, the following questions, namely: What is "Expert Testimony?" What are its essential elements of value? Who are medical experts?

Expert testimony differs from ordinary, or non-professional, testimony in this respect, viz: Ordinary testimony consists of statements of facts as observed by the witness stating them,

¹⁴Tardieu. *Étude Médico-legale*, etc. Paris, 1879.

¹⁵Fournier. *Nourrices et Nourrissons Syph.* Paris, 1878.

and opinions based upon such facts, exclusively, the facts having been first fully stated. Expert testimony consists of opinions, based upon facts, as observed by the witness, or presented for his consideration hypothetically—having been observed by others—that he, by reason of peculiar knowledge, is, alone, supposed to be capable of interpreting.

This definition of expert testimony being accepted, it should not be difficult to determine the elements of value pertaining thereto. They are: *First*. Scientific principles generalized from facts, applicable and equal, to the solution of the problem under consideration; and *Second*. Capability on the part of the professed expert to make use of such principles in the solution of the problem given without bias or prevarication.

That scientific principles, applicable, and adequate, to the solution of the problem given, are essential to value, in the constitution of expert testimony, may be inferred from the fact, that without a knowledge of such principles, the testimony of one witness, of equal intelligence, and opportunities of knowing, would be equal in value to that of another. It is, also, apparent that such principles, to be applicable, and adequate, must bear a definite relation to the facts presented for interpretation, and present features of consistency, and accuracy, that admit of no alternative construction. Were it not so: if, for example, the principles of the science of numbers were not definitely related to the facts of accounting—or not so consistent and accurate as to justify perfect confidence in the prediction that two and two, if added, will make four, it would require no argument to convince us that the testimony of an "expert" accountant would be of no especial value, the data of his calculations being unworthy of trust. The same might be said of the expert surveyor, engineer, or astronomer—the value of whose interpretations of facts is derived from the infallible accuracy of the principles of the science of numbers. So, too, with the chemist (the value of his testimony as an expert depending, primarily, upon the accuracy of the principles of his science), if the relation of chemical phenomena to conditions of matter were not definite and uniform—given phenomena being inevitably sequential to given conditions of matter—the expert testimony of the chemist would be comparatively, if not entirely, worthless. Nor is argument needed to convince us that the testimony of the most capable expert, informed by principles of the most accurate science, might be vitiated, or invalidated, by dishonesty.

What, then, is the real value of medical expert testimony? And who should be considered as medical experts? Doctors of medicine are called upon to testify as experts in a range of cases involving questions of malpractice in medicine proper, surgery and obstetrics; and in cases of suspected crime

in which questions of cause of sudden, or unhistoric death arise; and in cases of still greater difficulty and importance, in which questions of mental conditions affecting the rights and privileges of citizens have to be adjudicated. Does that aggregation of knowledge known as "medicine" furnish the necessary principles for their qualifications as experts in all such cases? Are all persons engaged in the practice of medicine, and popularly recognized as "doctors," informed by such principles as do pertain to the so-called "medical sciences." These questions become especially pertinent in view of the fact that there is no recognized standard of educational attainment pre-requisite to either the title or privileges of a doctor of medicine in this country—and the common law admits them all to testify as experts—subject only to the test of cross-examination, as to qualifications, by attorneys who may, or may not, be capable of exposing false pretensions.

When we consider, seriously, the natural capabilities, and acquired knowledges, of a large proportion of the multitude of men and women engaged in the practice of medicine in this country, and the questionable character of much that is taught by the numerous "schools," or sects, of medicine, as science, these questions assume still greater importance; and the presumption of law that all are experts becomes preposterous. Even after eliminating from consideration all persons engaged in the practice of medicine, who are not graduates of reputable, regular, medical schools, the presumption would still be too violent for entertainment.

What, as a matter of fact, does such a presumption imply? Nothing less than an affirmation that the sciences constituting medicine, as taught in our schools, are informed by principles that are definite, comprehensive, and trustworthy beyond dissention; and that every one certified proficient in medicine, by such schools, is competent to make intelligent use of them in the formation of opinions as medical experts, on all subjects.

But to get at the grain that may be in this chaff, let it be admitted that the instruction given in our schools is adequate to qualify medical witnesses to determine, as experts, whether or not an infant found dead was still-born; whether or not certain wounds, seen or described, were necessarily fatal. Whether or not certain deformities following injuries were the results of malpractice. Whether or not, as indicated by symptoms, and post-mortem appearances, and chemical and microscopical examinations, in any given instance, death was effected by poison, etc.; still, the more important qualification of the medical expert to determine questions of mental manifestations, and human actions, whether or not influenced by pathological conditions of brains, or other organs, remains to be accounted for. What has medicine in its widest range of

instruction to offer on this subject? After all, how little! The most thorough-going anatomist is no wiser, respecting the genesis of mind, or the relation of mental phenomena to material conditions, because of his dissections. The most learned and practical chemist knows no more of such matters, because of his analyses, and syntheses, of inorganic and organized bodies, than does the anatomist. Thereapeutics throw no light of principles upon the subject. Surgery is dumb, and obstetrics blind, respecting mental science. Physiology—that wonderful and growing science, that is to be, to all other natural sciences, what Aaron's rod was to the rods of the Egyptian magicians—has it not already furnished us with a new psychology, and is it not adequate to our present necessities? Let us see. If we depend upon science to furnish principles answering to our necessities, what are the requisites? It is requisite that such principles shall be applicable, accurate, and indisputable. Does physiology, as now taught in our schools supply the need?

Admit the fact that physiology has already swallowed up all the metaphysical psychologies, and that brains, with their appendages, the nerves, have come to be recognized as essential organs of mind, by which all mental operations are conducted. That when a man, or any other animal, feels, perceives, remembers, imagines, reasons, wills, or acts, it is because of material capabilities, and his brain and nerves do something. That there is a relation more or less definite, of mental capabilities, and characteristics, to size, form, and quality, of brain structures; and an association of certain mental phenomena with certain areas of brain-substance. That modifications of mental capabilities and expressions, constituting all of the many degrees of capability, and peculiarities of expression, known as "idiocy," "imbecility," "mania," "melancholia," and "dementia," may be effected by arrest of cerebral development, and modifications of brain activities, whether effecting constructive or destructive results, and concomitant transmutation of energy—admit all this, as pertaining to present physiological knowledge—still the fact is apparent that we have not been supplied with such scientific principles as would, alone qualify medical experts to testify as such, in the jurisprudence of insanity.

Physiology, as taught in our schools, is indeed, still in doubt respecting the relation of mind to body: whether consciousness is an inherent quality of matter, manifested, as all other qualities are, by motion; or an attribute of a supernatural, indwelling spiritual being, not subject to sensuous observation, but inspiring or instigating, all bodily activities. In doubt, whether mental manifestations are concomitants of brain activities instigated by an immaterial ego, or the

inevitable sequentials of ever-changing conditions of brain-substance, influenced by environments.

Nor can physiology tell us, in accordance with any theory, just what the brain or body, or spirit, does when a man feels, thinks, or acts; nor just what instigates his activities, determines his movements, and differentiates his capabilities. So that, even with these doubts of physiology dispelled, and the subject of man's creation and constitution forever withdrawn from the shadows of superstition, and the overawing presence of the supernatural; and the science of psychology arranged in line with all other natural sciences, in accordance with a monistic theory of the universe—of which men are inseparable particles—we should still be unable to predict, with certainty, the phenomenal sequences of all given conditions of body, or brain, precedent; or to infer, with precision, conditions of body, or brain, by any given mental manifestations, unaided by other than physiological information.

Why then should doctors of medicine be regarded as experts in the jurisprudence of insanity, more than other persons of equal general intelligence? Is it not because of the fact that the official relation of the doctor of medicine to the afflicted, is now, as it ever has been, the most intricate, intimate, and privileged, known, or tolerated, by civilized or savage society; and because his movements as diagnostician, and dispenser of drugs with healing virtues are, to the uninitiated, within that same shadow of superstition that obscures their vision when trying to comprehend the mystery of thought, whether sane or insane? Hence, his greater opportunities of observation and study of the natural history of men and their disorders, and the endless variations of mental phenomena as related to material, observable, facts. Must not any claim of qualification as an expert in the jurisprudence of insanity, therefore, be based upon special, long-continued, intelligent, observation of the insane; and careful, comprehensive, studies of the natural history of insanity—rather than special knowledges derived from medical authorities—however advantageous such knowledges may be to the observer and student? And must not the value of the testimony of experts, so qualified, correspond to the natural capabilities, advantages of education, and experience, and general interest in the subject, of the persons testifying?

In these days, therefore, of specialties in medicine, and the habitual commitment of the insane to hospitals, or asylums, for treatment, or maintenance, at the earliest practicable moment, but few general practitioners of medicine have either the opportunity or disposition to so qualify themselves as experts, in this branch of medical jurisprudence; and but few—to the credit of the profession be it said—voluntarily appear in court pretending to be such.

Of the second essential element of value mentioned, the integrity, and freedom from bias, of the expert witness, but little need be said. Perverted knowledge is more dangerous than conceited ignorance. The natural tendency, of experts, however, is to invalidate their opinions more or less, by the admission of color derived, imperceptibly, it may be, from the interest taken in behalf of the parties employing them. Instigated, also, by professional pride, experts, like detectives, are more zealous in finding what they are supposed to be peculiarly qualified to find, than otherwise; a fact that in this country has been, so far as expert testimony has influenced courts or juries in any way, advantageous to defendants, in cases of criminal prosecution; and of plaintiffs, in cases of contested wills.

These are natural tendencies that experienced experts are capable of overcoming, when recognized; but should not be overlooked in estimating the value of expert testimony.

Of the mercenary and venal expert, nothing need be said. If such there be, they have no proper place in a profession so proverbially unselfish as that of medicine.

Cincinnati Sanitarium, May 4, 1888.

CONDITIONS THAT PRECEDE SERIOUS LESIONS OF THE KIDNEYS.

Read before the Mississippi Valley Medical Society, at St. Louis, Mo., September 26, 1888.

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The untiring energy of medical men of this period seems to be expended in a search for the primary causes of disease. At one time we awaited the inevitable result of some fatal malady to observe at the post-mortem its pathology. At a later period we were eagerly watching some distressed patient, slightly affected with disease, with the hope that some intercurrent trouble might destroy him, for the sake of a pathological specimen representing a less severe lesion. To-day we sincerely hope the patient will not die at all, however charming a knowledge might be brought to light by the legacy of his pathology. What we most desire as medical men now, is to avert the more serious lesions by recognizing the first departure from the healthy condition.

After the lungs are largely solidified or filled with purulent cavities it is of little avail to advise a trip to the mountains, or give drugs to bring about renewed health. There is a fearful mortality among such a class of patients; but as we are enabled to recognize the beginning stages, by better means of diagnosis and a more extended knowledge of the disease, we can act more promptly, and either check the malady in its initial stages or, what is better, prevent the patient from having it at all.

What is true of these lung lesions is equally true of serious chronic conditions of the kidneys. Francis Delafield, in his article on chronic parenchymatous nephritis in "Pepper's System of Medicine," speaks thus of the prognosis: "The prognosis of chronic parenchymatous nephritis is not good, but still it is not so bad as that of chronic diffuse nephritis; some of the cases recover and never have any further indications of kidney disease." Of chronic diffuse nephritis he says: "In every case of chronic diffuse nephritis, the natural course of the morbid changes in the kidney tissue is to become more marked and involve more and more of the kidney. . . . The disease is always a very serious one, and terminates regularly in destroying life, but the length of time that will elapse before this fatal termination, and the precise way in which death will take place, are difficult to determine beforehand."

As this is the most frequent form of kidney disease, it will be apparent that the mortality is very great, and if there is hope in the future of doing better work for this death-stricken class of sufferers who annually find premature graves, we must learn to diagnose this disease before the point now reached; before we are able to recognize the conditions by our present methods of diagnosis. When we find a patient suffering from swelling of the extremities and face, muscular twitchings, dyspnoea, neuralgic pains in various parts of the body; a patient who passes albumen, with a diminished quantity of urine; who also passes casts and has a badly disturbed stomach, we are thus led to believe that such an one is beginning, or has begun sometime previous, the career of some serious lesion of the kidney; and our discovery is fraught with but little that can encourage the patient in cases of chronic changes in these organs.

For more than four years past I have been making examinations of urine from patients suspected of having some chronic lesion of the kidneys. The examinations have been conducted with an especial reference to the amount of urea excreted in twenty-four hours by individuals among this class of patients. Not only to cases of these diseases have the examinations extended, but also to other conditions of ill-health and to urine excreted by perfectly healthy individuals so far as I was able to judge. During this time I have made examinations for about eighty patients having the prominent symptoms laid down by the latest and best authorities as those denoting chronic structural changes in the kidneys. For these patients, extending over this space of time, I have a record of nearly 800 examinations, not including the other examinations just referred to relating to other diseases. During this time I have twice called the attention of the Indiana State Medical Society, through papers,¹ to this subject, and have

¹ First paper, entitled "Urea," may be found in Transactions