The mere fact that the manifestations subjectively followed the alleged antecedent in question furnishes no ground for inferring a causal relation between the two; in fact, no such inference can have the slightest justification unless it can be shown by direct evidence that the said manifestations are the necessary dependencies of the said antecedents. The consequences need not necessarily be immediate, but if mediate, continuity, consecutiveness, and concatenation must be shown. In the case under discussion these things can not be shown. The conclusion then that the tabes is the result of the injury received is without the slightest justification, as it rests entirely on assumption and inference.

DIAGNOSIS SHOULD BE BASED ON EVIDENCE.

Every diagnosis is, or should be, a conclusion based on evidence, yet how often do we find when the rules of logic are applied that the diagnosis, instead of resting on evidence, rests on assumption and inference. This is due to the fact that the majority of physicians in their ratiocinations fail to distinguish between assumption, inference and fact. An assumption is that which is taken for granted—that which is accepted as true without evidence—while an inference is the result of a ratiocination based on a certain amount of evidence. The difference between an inference and a conclusion is that the former is drawn from the appearances of things, is partial and indecisive, and pertains to particular circumstances, while a conclusion is drawn from real facts, is full, decisive and conclusive, and expresses the necessary dependencies of the premises.

The difference between an assumption, an inference and a conclusion may be well illustrated, as follows: A patient presents himself suffering of a disease of one kidney, which may require removal. The question which immediately presents itself is, Has the patient two kidneys? Omitting the preliminaries of the mental process for brevity's sake, the proposition may be stated in this manner:

Most men have two kidneys.

This is a man.

Therefore, this man has two kidneys.

It will be seen that the major premise contains the word most, which at once subdivides men into at least two classes, while the minor premise contains nothing whatever which indicates to which class the particular man belongs. Therefore no conclusion can be drawn, and when it is accepted that this particular man has two kidneys it is a pure assumption. If, however, by the use of the segregator or ureteral catheter, urine be collected in the two vials, some evidence is present on which may be based an inference that the patient has two kidneys. If in addition to the mere collection of separate urines the urines be noted to drop in a normal intermittent or perhaps alternating manner; if one be markedly bloody while the other is perfectly clear; or if on analysis the composition of the one differs so greatly from that of the other as to make it impossible that both could have come from the same organ, then the conclusion is warranted that two kidneys exist in the particular man in question, and this fact may now be used in arriving at any further conclusions regarding, for example, the proper course to pursue. Thus it becomes self evident that a conclusion cannot be based on an assumption or an inference, but must rest on the facts themselves.

Medicine is a science, and the statement is not invalidated simply because most, yes, the large majority,

of the facts pertaining to it are unknown. No science is complete in the sense that all the facts pertaining to it are known.

During the development of any science or of a theory it frequently becomes necessary to assume the existence of certain conditions or relations as a working basis, but it should be remembered that all deductions made from such assumptions are purely hypotheses, and are but the scaffold which supports the workmen during the building of the permanent structure.

In medicine there are many hypotheses which are of the greatest value in enabling us to develop the facts, but when we come to the practical application of our knowledge to the individual case, or to the giving of testimony before courts and juries, we should learn to recognize and to distinguish the assumed, the inferred and the hypothetic, so as to confine ourselves to the known facts and the warrantable conclusions deviate therefrom.

NATIONAL SUPERVISION AND STANDARDIZATION OF FOOD.*

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The relation of pure food to the health of a nation is equally important with good government of a nation. Each year shows not only an increase in the efforts of hygienists and governments to protect the individual in the matter of his food, but also the slow but steady progress of food-producing and controlling corporations in their adulterating, embalming, misbranding and counterfeiting processes, culminating in the disgusting and nauseating revelations of the past few months, which have shaken faith throughout the civilized world in the purity of almost every article of food and drink.

Proprietary drug compounds are, in many instances, either inert, wholly false in their claimed composition, dangerous to health or habit producing. Under various names they are hawked about, through a variety of methods, leaving in their wake disappointment, poverty, complicated illnesses, habits and mental wrecks.

Wealth, greed of the tariff-protected corporations and their almost unlimited opportunities for fraud give birth to these abuses. Ignorance on the part of the laity of the facts, or lack of appreciation of the health effects, together with the failure of the physicians and hygienists to educate the public in these matters, fosters this state of affairs. Publicity is the potent remedy for these evils.

The food of a nation should be as genuine as the nation's bond and currency. Counterfeiting of either should be a felony, and as such should be severely punished.

Because of its application to present conditions, I quote from the report¹ of the committee of the Pan-American Medical Congress on "Department of Public Health for the United States," adopted at Mexico City, Mexico, November, 1896, the following:

"We further recommend:

"The passage of uniform national and state laws regulating the importation, exportation, sale, inspection, and standard of meats, fruits, and food-stuffs, water supply, ice, milk, and beverages, prohibiting adulteration and providing adequate penalty for violation.

"The passage of uniform national and state laws regulating

* Read before the Section on State Medicine, British Medical Association, Toronto, Canada, Aug. 24, 1906.

1. For full report see U. S. Senate document No. 38, Fifty-fifth Congress, first session.

the manufacture, importation, exportation, and sale of drugs and chemicals, with provision for their inspection, and penalties for their adulteration. And a further provision requiring the labeling with exact formula of all proprietary medicines and compounds, and providing penalties for violation.

"The passage of uniform laws, national and state, regulating the sanitation of railroad cars, both steam and street, barges and ships, steam and sail, public vehicles, ambulances, laundries, slaughter houses, morgues, hospitals and dispensaries, jails and reformatory institutions, with penalties for violation."

"The passage of uniform laws, national and state, regulating the hygienic management of contagious diseases, personal and house quarantine, vaccination, hygiene of dentistry, barber shops, public baths and gymnasiums, amusement halls, migration of tramps and profligate persons, disposal of dead bodies, garbage and sewage, draining of land, and removal of weeds and decaying vegetation, and providing penalties for violation.

"The passage of uniform laws, national and state, providing for and regulating disinfecting plants, steam, dry heat, and chemical, for mails, foreign and domestic, clothing bedding, money, persons, etc. Bacteriologic laboratories, animal industry and inspection plants, state and national hospitals, and retreats or sanitariums for the treatment of habitués, inebriates, venereal, tubercular and insane persons, with special laws for commitment to and discharge from the same. District nursing for the poor, sick, obstetrical, contagious diseases, etc.

"The passage of uniform laws, national and state, providing for the appointment of state and national medical experts and the punishment of medical crimes.

"The passage of uniform laws, national and state, regulating state and interstate medical, surgical, and dental practice, which will protect the same as a science and not as a trade.

"We further recommend adequate appropriation of money by the several states and the general government for the scientific investigation of public health matters in this and foreign countries, and the suppression of diseases, endemic and epidemic.

"We further recommend that appointment to and the tenure of medical offices shall depend upon professional ability and efficiency, and not on political influence.

"HENRY L. E. JOHNSON, M.D.

"President Committee on Department of Public Health."

The health of the public, through an appropriate department of the government, should be efficiently protected, and all food, beverages, drugs and drug compounds, their preparation, preservation, storage and sale should be standardized and regulated. International standardization should and can be made universal by treaty with the several powers.

Opposition to standardization and control emanates principally from the large dividend-paying, tariff-protected corporations, who, when reforms are urged, make their usual threat—"To increase the cost to the consumers"—and in other ways obstruct and defeat proposed remedial legislation.

Cold-storage foods, undrawn poultry, canned goods and meat packers' productions offer a broad field for medical and hygienic investigation, for determining food etiology and placing responsibility, in connection with the alarming increase in intestinal diseases, deaths from appendicitis, and the so-called "acute indigestion." A few successful legal actions, civil or criminal, based on established bad food causation of illness or death, would promptly drive disease-producing foods from the market.

From a politico-industrial point of view, the recent legislation in "the states" providing for pure food and meat inspection is excellent so far as it goes, but, from a medico-hygienic standpoint, is not entirely efficient or satisfactory, as it tends to conserve the financial interests of the producer and jeopardize the health of the consumer, by delaying the operation of the food bill, and by omitting the date of slaughter, production and inspection

from the government certificate or label, thereby placing an immense quantity of meat and meat products, prepared under presumably careless and objectionable methods, now in cold storage or warehouse, on an equality with, and indistinguishable from, recent products prepared under careful government supervision. An identical inspection stamp or certificate will be placed alike on meat slaughtered 5 years and that slaughtered one month, without any distinguishing marks to guide the innocent purchaser. Thus, the consumer is deprived of his right of selection, choice, and exact knowledge of meat and meat products, by the absence of dates of slaughter and inspection. Meat slaughtered and kept in cold storage five or ten years may be wholesome at the time of inspection, but how much longer will it keep so? The government's certificate given in such cases is legally final, but such a guarantee is at least doubtful as to healthfulness.

The American people contributing this year, from their tax funds, the vast sum of \$3,000,000 to enforce this special legislation, designed to correct inexcusable irregularities of meat-producing corporations, should have, irrespective of political faith, supported the demands of their President, and insisted on further protection of their health, through adequate inspection, dating certificates or labels, and severe penalties for violations.

WHAT EFFECTIVE MEASURES ARE THERE FOR THE PREVENTION OF THE SPREAD OF SYPHILIS AND THE INCREASE OF PROSTITUTION?*

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It is not to be supposed that there exists at the present time a single moralist sufficiently severe, or rather insufficiently enlightened, who would dare to doubt the necessity of measures capable of combating the propagation of venereal diseases. Fortunately, the time has past when syphilis was believed to be the unique result of depravation and was considered as the legitimate punishment of debauch. The numerous sources of infection are too well known at the present time to uphold the old rigorous theories and to these I shall not revert.

Of all the diseases which may affect the human race by contagion and which bring about the greatest disasters to society in general, there is not one more serious, more dangerous, or more to be feared than syphilis. This, I believe, is generally admitted, and since this is the case, why should not the proper authority profit by the knowledge that the progress of science dictates? Many years ago Michael Lévy said: "The extirpation of this leprosy of our time that is called syphilis, is not above the power of governments. The sequestration and leproseries put an end to the old scourge, leprosy; this plague has been the object of an extensive and expensive prophylactic control; every nation has made sacrifices to do away with the germs of smallpox, yet syphilis has caused more harm than all these diseases put together. It silently deteriorates generation after generation; its contagion is more evident than that of the plague; why are not the same barriers and the same means of extinction built up in all countries? Such is the human race; the lightning of insolate epidemics which pass over our heads like an electric cloud, benumb and frighten people."

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.