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THE PROPOSED ENLARGED NATIONAL PUBLIC HEALTH ORGANIZATION

A DISCUSSION OF PLANS FOR ITS ORGANIZATION

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A careful reading of the hearings before both the Senate and the House committees, which have been considering the Owen and other bills, designed to coordinate and increase the public health activities of the general government, compels the conclusion that the committees obtained very little that would be of value in solving the problem before them. That problem may be stated to be the drafting of a law which will give adequate recognition to the importance of national public health work, and at the same time will avoid being made the instrument for exploiting the theories of a great variety of well meaning people whose preference for some particular plan of organization; or enthusiasm for some particular form of research or educational propaganda, is in inverse proportion to their knowledge of the limitations of national health legislation on both the practical and the constitutional sides.

NATURE OF PROBLEM

Broadly speaking, the problem involves two questions: (1) What relation shall the public health organization bear to the other executive organizations of the government? and, (2) How shall the organization be constituted in order to give it at once the greatest practical efficiency within the limits of that relation?

What practical assistance, then, did the committees get from the voluminous testimony presented to them? Let us analyze it and see.

ANALYSIS OF THE HEARINGS

The witnesses fell naturally into two classes, those advocating legislation along the lines of one or more of the pending measures, and those opposed totally or in part to the principle underlying those measures. The second class can be quickly disposed of because, their efforts being directed toward preventing action along the general lines followed by most of the pending bills, their ideas could not be of much use in shaping legislation in furtherance of the object of those measures.

An exception to these must, however, be made in regard to several of the purely legal points raised by Ex-Governor Bates as attorney for certain organizations opposing legislation, for while most of these points were more adroitly than convincingly presented, there were some others which raised questions which, it must be

admitted, had apparently never occurred to many of the proponents of the measures under consideration.

Passing to a consideration of the statements of the proponents, they are readily classifiable into several pretty definite categories. First in point of numbers, those whose statements were largely confined to a presentation of the great importance of expanding the scope of the national public health activities, to an enumeration of the problems for the elucidation of which only national agencies seemed adequate, and to explanations of the enormous advantages, racial, social, educational, economic and sanitary, which would follow the solution of those problems. Some of these witnesses had incidentally something to say about the specific measures under discussion, but for the most part their statements contained nothing that would either inform the committee as to what the government was already doing, what it should do, or how it should do it.

The second class comprised those whose arguments were directed to supporting the fundamental proposition that the proposed increase in governmental activities required the establishment of a new executive department, and, in so far as their arguments may be accepted as valid by the members of the committee, their testimony can be regarded as helpful.

The third class comprised those whose testimony concerned the desirability of transferring to the new organization certain specific activities at present located in existing organizations of the government, and while the witnesses concerned had very little if anything to say definitely as to the extent to which these activities were to be transferred, or the manner in which they were to be correlated with other activities in the organization of either existing or new public health agencies, still, so far as it went, this testimony can be considered as helpful, but like that of the other groups, it did not go far in the direction of constructive suggestions. There were two exceptions to this. Before the Senate committee Dr. Kober and Dr. Wiley did present constructive suggestions as to the activities to be transferred to the new organization, and explanations of reasons for such transfers.

Disregarding the statements of the first class of the proponent witnesses as not of immediate constructive utility, what does all the rest of it yield? First, arguments as to what kind of a head the new organization shall have, arguments which go very superficially into only one of several of the suggestions offered as to his rank, and the method of his selection; second, fragmentary discussion of what agencies shall be under him—nowhere any presentation either of the broad general questions involved in designing the proposed organization, or the systematic study of the details necessary to make that organization effective.

This is in no sense intended as a criticism of the motives or ability of the witnesses. It simply points out the inherent difficulties in properly presenting such questions to a large committee by means of testimony of witnesses, whose very eminence in various lines of human endeavor, while it explains their being put forward as specialists as to certain phases of the subject, causes them to take a rather narrow view of it and necessarily produces a somewhat fragmentary and inconclusive mass of testimony.

Now it appears to me that, aside from the question of who shall be at the head of any organization, the real matters to be considered are what in general terms are the kind of activities that may be properly included in a national health organization at the present time, how far they already exist in one place or another, and how far they must be created *de novo*.

I have kept pretty closely in touch with the discussions of these matters during a good many years, and think it is safe to say that there has been more said about what kind of a head the public health agency should have than about the organization of the agency itself.

PLAN OF DISCUSSION

Deferring for the present the consideration of that matter, I desire to present the question of the organization. I wish first, however, to make it plain that I do not intend to present the matter from the point of view of any particular organization, sect or clique, either official or unofficial. I propose merely to outline a tentative enumeration of the *kind* of activities that might be embraced in the national health organization, to take them up seriatim and set forth to what extent they exist, how far existing agencies are capable of development, to what extent their transfer from their present location would be possible or desirable, and what new agencies would have to be created. I then propose to present the only two possible plans for the organization of the various activities into a practical administrative machine, and lastly, to discuss what sort of a head the whole organization should have.

I am aware, as already stated, that this is reversing the plan followed in most of the discussions of the subject, but I believe it is logically sounder to settle the question of the apex after the dimensions and character of the subjacent pyramid have been settled than to determine the character of the apex and then construct the pyramid to fit it.

Just here it may not be amiss to point out the chief difficulty that has confronted most of those who have undertaken to make detailed plans for a department or bureau of public health, and that is that very few of them have been familiar with the legal aspects of the case, of precedent, existing or former laws, the opinions of the comptroller or the decisions of the courts. Neither, as a rule, have they been familiar with governmental matters. In effect they have undertaken to make plans for an edifice without being familiar with either the inherent structural qualities of some of their materials, or the provisions of the building code under which they must be combined. I do not claim to be exempt from these difficulties myself, but twenty-two years close contact with many of them has given me a fair degree of familiarity with the subject, and I have therefore in the preparation of my plan avoided such difficulties, as far as I could, and endeavored to indicate what they were when I could not avoid them.

In the outline presented in the accompanying diagram I have embodied more or less the suggestions offered by various people at various times as to what should be represented in the new organization, notably those of Dr. Kober and Dr. Wiley before the Senate committee, but the arrangement is my own, the result of many years of practical experience with the advantages and defects of the existing public health agencies of the government.

REASONS FOR TWO GRAND DIVISIONS

In the accompanying diagram it will be noticed that there are two grand divisions—scientific and administrative. There are three reasons for making these two grand divisions.

First.—There are grave constitutional questions involved in administrative action by the government, in many public health matters, questions involving the "police power" and the like, which do not apply to the making of purely scientific investigations and the publication of the results. The latter may be clearly justified as necessary for the information of the government in order that it may intelligently regulate the sanitary aspects of interstate and foreign commerce, or for intelligent regulation of its own governmental agencies, or of areas under its jurisdiction. In organization, therefore, the two sides should be kept distinct in order that legislative action designed to promote the research side be not restricted by the necessity of avoiding constitutional restrictions on administrative encroachment on the powers reserved to the states.

Second.—This arrangement will facilitate the coordination of the commissioned organization of the Public Health and Marine-Hospital Service with the activities to be enlarged, transferred or created. Every impartial student of the subject knows that this service will be the largest single component of any new health organization, and the question has been how to retain the advantages afforded by the coherent, compact and disciplined administrative efficiency of that service, and at the same time secure the necessary flexibility of organization to provide for the utilization of a personnel drawn from a variety of other sources, especially in connection with research work. I do not for a minute mean that the personnel of the Public Health and Marine-Hospital Service shall be confined to the administrative side, or that the personnel drawn from other sources shall be confined to the research side; neither am I trying to champion the Public Health and Marine-Hospital Service under the pretense of an impartial discussion of the subject of the new organization. I only want to point out one of the advantages in keeping the natural grand divisions clearly in view when making legislative provision for the new organization.

Third.—The division follows the customary lines of governmental organization and will therefore promote efficiency.

EXPLANATION OF DIAGRAM

A. SCIENTIFIC SIDE. (FIRST GRAND DIVISION.)

I. Bureau (or Division) of Statistics and Reports.

(a) *Compilations.*

The compilation and publication of the mortality statistics of this country is now done by the Division of Vital Statistics of the Census Bureau, Department of the Interior. The current morbidity and mortality statistics concerning the so-called quarantinable diseases, cholera, plague, typhus fever, smallpox and yellow fever, of both this and foreign countries are

HEAD

B. ADMINISTRATIVE

A. SCIENTIFIC

A. SCIENTIFIC			
I. BUREAU (OR DIVISION) OF STATISTICS AND REPORTS.	II. BUREAU (OR DIVISION) OF SANITARY RESEARCH.	I. BUREAU (OR DIVISION) OF PERSONNEL AND ACCOUNTS.	II. BUREAU (OR DIVISION) OF QUARANTINE AND IMMIGRATION.
(a) Compilation.	(a) Laboratory Investigation.	(a) Mails, Files, etc.	(a) Quarantine.
(1) Morbidity.	(1) Bacteriology and	(b) Personnel.	(1) Domestic.
(2) Births.	(2) Pathology.	(c) Accounts.	(2) Foreign and In-
(3) Deaths.	(3) Parasitology.		sular.
(b) Publications.	(4) Physiology.		(b) Immigration.
(c) Library of Medicine and Surgery.	(5) Biology—to include the control of vaccine and antitoxin production.		(c) International Sanitary Relations.
(d) Climatology.	(6) Chemistry.		(d) Management of Epidemics.
(e) Advice to State and Local Authorities.	(7) Pharmacology.		(e) Philippines and Isthmus.
	(b) Field Investigation.		
	(1) Epidemiology.		
	(2) Housing and Social Conditions.		
	(3) Workshops, Mines and Industrial Conditions.		
	(4) Study of the Disposal of Wastes.		
	(c) School of Applied Hygiene.		
	(1) For Service Officers.		
	(2) For State and Municipal Officers.		
B. ADMINISTRATIVE			
I. BUREAU (OR DIVISION) OF GOVERNMENT HOSPITALS.	III. BUREAU (OR DIVISION) OF GOVERNMENT HOSPITALS.	IV. BUREAU (OR DIVISION) OF APPLIED SANITATION AND SANITARY ENGINEERING.	
(a) U. S. Marine Hospitals.	(a) U. S. Marine Hospitals.	(a) Interstate Sanitation.	
(1) Marine Hospitals and Dispensaries.	(1) Marine Hospitals and Dispensaries.	(1) Water Courses.	
(2) Medical Officers for Revenue Cutters.	(2) Medical Officers for Revenue Cutters.	(2) Railways.	
(3) Physical Examination for Enrollment, Revenue Cutter Service.	(3) Physical Examination for Enrollment, Revenue Cutter Service.	(3) Shipping.	
(4) Examination of Sight and Hearing of Pilots and Masters.	(4) Examination of Sight and Hearing of Pilots and Masters.	(b) Public Buildings.	
(5) Physical Examination for Saving Service.	(5) Physical Examination for Saving Service.	(c) Assistance to State and Local Authorities.	
(6) Service to be rendered in time of war.	(6) Service to be rendered in time of war.		
(b) U. S. Hospitals and Baths, Hot Springs, Ark.	(b) U. S. Hospitals and Baths, Hot Springs, Ark.		
(c) Medical Service, U. S. Soldier's Homes.	(c) Medical Service, U. S. Soldier's Homes.		
(d) Hospitals for Immigrants.	(d) Hospitals for Immigrants.		
(e) Government Hospital for Insane.	(e) Government Hospital for Insane.		

compiled and published weekly by the Division of Statistics and Reports of the Public Health and Marine-Hospital Service, Treasury Department. The statistics of other infectious diseases, as tuberculosis, measles, typhoid and scarlet fever and diphtheria, are also collected from those states or municipalities which will supply them, and published weekly by the Public Health and Marine-Hospital Service, Treasury Department, together with the tabulated mortality reports of some ninety principal foreign cities, and untabulated mortality reports from a considerable additional number of foreign cities and countries.

Vital statistics are the foundation of scientific public health work, and they are equally essential for the analysis of census returns. On the other hand, international statistics are not properly a part of the census, and both the Census Office and the Public Health and Marine-Hospital Service rely on states and municipalities for their information, but of course the machinery of the Bureau of Vital Statistics is much more complete than that of the other service and its personnel is better trained in the interpretation of statistics on their social and economic sides, and to a lesser extent on their sanitary side. The question may therefore be stated thus: The census work would not be complete without the collection of vital statistics; scientific public health work cannot begin without access to compilation of vital statistics.

Fortunately figures are not like the fruit of scientific research. They can be collected by one agency and interpreted by another in so far as they apply to its own work. Whether then the Division of Vital Statistics should be transferred to the health organization, or whether it shall supply the latter with the results of its work, the mutual division of the publication to be determined by regulations, is not a very essential matter.

(b) Publications.

The existing publications of direct public health interest are the bulletins of the Hygienic Laboratory, the Public Health series of pamphlets, the Weekly Public Health Reports, and the Surgeon General's Annual Report, all issued by the Public Health and Marine-Hospital Service of the Treasury Department; some of the bulletins of the Bureau of Chemistry, Bureau of Animal Industry, Bureau of Plant Industry, and the nutrition investigations of the Experiment Stations, all of the Agricultural Department, and a few of the publications of the Department of Commerce and Labor—especially of the Bureau of Immigration.

One of the greatest fields of usefulness open to a national health agency is in the direction of publishing the results of its various investigations and activities by means of bulletins, reports, lectures, and the like. The enormous good done by the Department of Agriculture along these lines is well known. There may be legal objections to going into a state to do intrastate work, even for interstate purposes, but there can be no objection to the communication to state and local authorities by the government of the results of its own investigations. In so far as it may be deemed wise to transfer, in whole or in part, any of the activities of the last two named departments, of which I will speak later, their publications would logically simply go to swell the number, bulk and value of the first three publications, the research reports falling to the share of the laboratory bulletins, those of the other investigations to the public health series, and the statistical and other matters of immediate interest for national, state and municipal sanitarians to the weekly *Public Health*

Reports. The skeleton of the agency for publications may thus be said to exist already.

(c) *Library of Medicine and Surgery.*

This—known as the Surgeon General's Library—is now in the War Department, but its work has no inherent or essential connection with the work of the Army Medical Corps which now supplies the officers who have charge of its work. It is the great medical library of the country and should logically go into a national public health organization.

(d) *Climatology.*

This is of important public health interest but as the meteorologic data on which it rests are compiled by the Weather Bureau in the Department of Agriculture, it would seem expedient that the collection of the data be left as it is, their interpretation only becoming a duty of the national public health organization.

(e) *Advice to State and Local Authorities.*

As this will be principally by means of publications, and correspondence in explanation and amplification of them, the work should belong to the Scientific Division.

II. Bureau (or Division) of Sanitary Research.

(a) *Laboratory Investigations.*

(1) BACTERIOLOGY AND (2) PATHOLOGY.

The bacteriology and pathology of public health interest is now done principally by the Division of Bacteriology and Pathology of the Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department, and the Bureau of Animal Industry of the Agricultural Department.

(3) PARASITOLOGY (to include entomology).

The work on these subjects of most importance from a public health point of view is now done by the Division of Zoology of the Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department, by the Division of Entomology, to some extent by the Bureau of Animal Industry, and to a less extent by the Bureau of Plant Industry, all of the Agricultural Department.

(4) PHYSIOLOGY.

There is no agency of the government now confined solely to the study of human physiology. Incidentally to the other work it is studied by some of the divisions of the Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department, the Food and Drug Laboratory of the Division of Chemistry, Agricultural Department, and by the Nutrition Experiments and Pharmacologic Laboratory of the same department.

(5.) BIOLOGY (to include control of vaccine and antitoxin production and nutrition experiments).

This also is studied incidentally as a part of the work of the Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department, the Bureau of Animal Industry, the Division of Entomology, Bureau of Plant Industry and Nutrition Experiments of the Agricultural Department. The nutrition work only in the latter, and the control of vaccine and antitoxin (by statute) only in the Hygienic Laboratory.

(6) CHEMISTRY.

General chemistry, organic and inorganic, purely as such, is now studied by express statutory direction in the Division of Chemistry, Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department, and in the Division of Pharmacology of the same. Chemistry as incidental to food and drug work, in the Division of Chemistry, also incidentally by the Bureau of Plant Industry, and to some extent in other divisions of the Agricultural Department; also in the Laboratory of the Bureau of Standards.

(7) PHARMACOLOGY.

In the Division of Pharmacology, Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department; in the pharmacological laboratories of the bureaus of Chemistry, Animal Industry and Plants Industry of the Department of Agriculture.

The agencies engaged on these branches (laboratory investigations) are so interrelated that the whole matter can best be discussed under one heading. It seems clear that in so far as any of the activities of the bureaus, divisions and laboratories mentioned can be disassociated from the work essential to the performance by the departments containing them of their own particular duties, they should be in a public health organization. In this category are all the divisions of the Hygienic Laboratory, Public Health and Marine-Hospital Service, Treasury Department, the nutrition experiments and the pharmacologic laboratories of the Bureaus of Plant Industry, Animal Industry and Chemistry of the Agricultural Department, and probably the Purification of Water Laboratory of the Bureau of Plant Industry. The Bureau of Entomology may be in this class but probably its major work is too intimately connected with the Agricultural Department to permit of its transfer.

DIFFICULTIES IN ARRANGING TRANSFER OF SOME OF THE LABORATORY INVESTIGATIONS

When we come to the chemical, biologic, pathologic, physiologic and bacteriologic work of the Agricultural Department bureaus and divisions the subject is most difficult. Much of the work done in these lines by these bureaus and divisions is merely incidental to their real function, and yet is inseparable from it, just as the production of by-products in a manufacturing plant may be of little moment to the business as a whole, and still the business cannot be conducted without developing them. Professor Wiley says that some of the "activities" could be transferred, but does not go into detail. The plain fact is that the problem is one that no congressional committee, or no one person outside of the committee, whether lay or medical, is competent to solve. The reason for this is that the question is neither a wholly legal one nor a wholly scientific one. In a sense it is one of "departmental engineering;" one of deciding just which cogs, wheels and pinions of the department machine can be removed without impairing the efficiency of the machinery or necessitating an expenditure, immediate or future, as great as the saving sought to be secured by the transfer of the parts to some other machine. For the present, however, it may be said that the main controversy rages around the question of what shall be the home of the "pure food" work and the inspection work of the Bureau of Animal Industry of the Agricultural Department, and the nub of the whole matter is whether these activities are "commercial" or "public health" matters. If the so-called "pure food" law is, as one of the most eminent sanitarians in the United States, the late Professor Harrington, has said it was, merely an act to prevent fraud and misbranding, conferring protection to public health as an incident to its execution and not as the object of its enactment, then it belongs where it is; but if it be a public health matter, either primarily or because of the resulting advantages of its enforcement, it should be in the public health organization. The same is true of the activities of the Bureau of

Animal Industry of the Department of Agriculture. One or more witnesses advance the idea that while the inspection, shipping, etc., of live animals was a "commerce" matter and as such should be under the Department of Agriculture, that the slaughtering and post-mortem inspections should be under the public health organization; in other words, that a live steer is an object of commerce, but that a dead one is not. The work of the Bureau of Animal Industry is of incalculable importance to public health, but so it is to the purely agricultural and commercial interests. How shall the dispute be decided? I think there is a way to settle these questions, but it should be properly taken up when we come to the question of legislation.

(b) *Field Investigations.*

(1) *EPIDEMIOLOGY.*

The work done on this subject is practically confined to certain field investigations made in this country by the Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department, under the direction of the Division of Sanitary Research of that Service, and in the Philippines by the Director of Health of the Insular Government, who is detailed from the Public Health and Marine-Hospital Service, and by the Army Medical Corps as incidental to their duty in the islands.

The general verdict being that the army work must be kept out of the national public health organization, all that would be necessary for the development of this branch of work would be to extend the scope of the authority, at present much restricted, under which the work is now done.

(2) *HOUSING AND SOCIAL CONDITIONS.*

(3) *WORKSHOP, MINES AND INDUSTRIAL CONDITIONS.*

There is considerable work done at present in the direction of investigating the conditions enumerated but it is incidental to the work of several bureaus and divisions of the Department of Commerce and Labor rather than by explicit statutory direction. The Bureau of Mines, Department of the Interior, has been recently created by statute, but it is not known at this time, what, if anything, will be done in the nature of sanitary investigation.

There was more or less said at the hearings, and a great deal has been written, about the necessity of putting this work under the jurisdiction of the national public health organization, and I have therefore included the titles among the activities enumerated as proper to that organization, but as I cannot see how administrative work along those lines can be legally done, I have placed the items under the group of subjects which the government may investigate for its own purpose, the results being then available for general information. If the work be done it must be done either by machinery created *de novo* for that purpose in the public health organization by transferring the activities now in the Department of Commerce and Labor to the health organization, or by the Department of Commerce and Labor as at present. The last plan would be the easiest, the second the most difficult, and the first would give the best results, though of course it would produce some duplication of work.

(4) *STUDY OF THE DISPOSAL OF SEWAGE AND WASTES.*

Some work has been done along this line by the Division of Sanitary Research, Public Health and Marine-Hospital Service, Treasury Department, directly, and some indirectly by officers serving on boards such as the Lake Michigan Water Commission; some by

the Purification of Water Laboratory and the Bureau of Plant Industry, Agricultural Department, and very extensive sanitary surveys have been made by the Geological Survey.

It would seem that the Purification of Water Laboratory should come into the public health agency and that means be provided for continuing the present work of the Division of Sanitary Research as above.

LEGAL WARRANT FOR THE STUDY OF THE DISPOSAL OF WASTES

The relations of this subject to the preservation of the navigability of streams, to the preservation of fisheries in waters under the jurisdiction of the general government and to the health of those engaged in interstate water-borne commerce, are so important that it is clearly one of the things about which there would seem no ground for objection from those who question the legality of some of the other work proposed by the advocates of an enlarged public health organization.

(c) *School of Applied Hygiene.*

(1) *FOR INSTRUCTION OF THE PERSONNEL OF THE PUBLIC HEALTH ORGANIZATION.*

(2) *FOR THE INSTRUCTION OF STATE AND MUNICIPAL HEALTH OFFICERS.*

The Public Health and Marine-Hospital Service, Treasury Department, now sends its officers to the Hygienic Laboratory under its own jurisdiction and admits representatives of state boards of health to take this laboratory course.

This has been the practice for a long time and the results have been good, but very limited. The most vital need in a public health way in this country is a supply of men trained for the work of local, county and state health officers. State and preventive medicine is a profession in itself and we can only advance in local health administration as we give appropriate recognition to that fact. If we had local health officers in the villages and rural districts of this country comparable to those they have in England, for instance, the public health problems would be on the road to solution, and there would be little for a national public health organization to do except to make scientific investigations and act as a sort of clearing house for the state boards, but it will be many, many years before that time comes, if it can ever come under our system of government, and in the meantime the interests of the country can be served in no better way than by providing the means by which the state, county, town and village health officers can be instructed in the technical side of their duties. Every man so trained will become a focus of active sanitary improvement within a certain area, and directly as these areas increase in size and number will those conditions disappear whose existence has been the basic cause of most of the agitation for the performance by the general government of many things that should be done by the states. We have been teaching the farmer how to double the number of bushels of grain he can raise to the acre, and why should we not instruct the farmer's local health officer how to cut in half the number of tombstones in the farmer's graveyard? This would have nothing to do with cults or systems of medicine, or the teaching of medical practice. The work of the health officer stops where the practice of medicine begins. He does not treat the sick, he prevents sickness.

How can the government legally maintain a school of applied hygiene to which the men of the state boards of health can come? For of course there is no dispute as to its right to maintain a school for the instruction of its own officers. It is by the same right that it subsidizes sectarian medical schools in Washington to which all may come, but fortunately there is a more direct precedent as in the case of the army schools at Leavenworth, Fort Riley and Fort Monroe for the instruction of its own officers, to which are admitted such officers of state troops as desire instruction. We already have part of the plant and the skeleton of the organization for this work. Whatever this Congress does in public health legislation it can do no one thing of greater potential good than to provide the means by which this work can grow in scope and efficiency.

B. ADMINISTRATIVE SIDE (SECOND GRAND DIVISION).

I. Bureau (or Division) of Personnel and Accounts.

- (a) *Mails, Files, etc.*
- (b) *Personnel.*
- (c) *Accounts.*

This first division of the administrative side of the national health agency follows the existing plan of the organization in the Bureau of the Public Health and Marine-Hospital Service of the Treasury Department.

It is essential for efficient executive administration that all the work covered by the subheads of this section be administered in one part of the organization. Through this division will pass all the correspondence, and in it will be kept all the records relating to correspondence, and to the personnel composing the various bureaus or divisions of the organization. In it will be handled all the accounts and records pertaining to them, and by it will be transacted all the business which the public health agency will conduct with the other executive departments of the government. All matters relating to personnel, employment, appointments, leaves of absence and the like, will be handled by this division.

This does not mean, of course, that correspondence cannot originate in other bureaus, scientific or administrative; it simply means that all incoming mail will be received and distributed through this division, and all outgoing mail, after being signed by the particular administrative officer charged with the authority to sign for the bureau or division in which the letter originated, will pass out through this Division of Personnel and Accounts after being entered, etc. Without such a division it would be impossible for the executive head of the entire public health service to keep in touch with what had originated, or what had been received by any particular bureau or division of the organization. The organization for this purpose now existing in the Public Health and Marine-Hospital Service of the Treasury Department is capable of being readily expanded to any extent that may be desired.

II. Bureau (or Division) of Quarantine and Immigration.

- (a) *Quarantine.*
 - (1) DOMESTIC.
 - (2) FOREIGN AND INSULAR.

All quarantine functions of the government are now entrusted to the Public Health and Marine-Hospital Service of the Treasury Department, and for

the purpose of carrying on the work that service contains two divisions: 1, the Domestic Quarantine, and 2, the Foreign and Insular Quarantine.

This division is purely one of convenience for the administration within the bureau. Under these divisions the service operates all the maritime quarantine stations of the Pacific coast and practically all of the Atlantic coast except that controlling the two great ports of Boston and New York. The law authorizes the government to take over the control of any state quarantine when the authorities of the state in question request it to do so, and provides for the compensation of the state for the plant turned over. In a few instances inspection stations are maintained by cities, although the government may maintain a station covering the navigable water leading to that city. In addition the government, through the Public Health and Marine-Hospital Service, has charge of the maritime quarantine of the Isthmus of Panama, in the Hawaiian Islands, in the Philippines and in Porto Rico, and maintains a considerable number of inspection stations in different parts of the world for the inspection and treatment, disinfection, etc., of vessels bound for the United States. There are forty-four quarantine stations on the coast of the United States operated by the Public Health and Marine-Hospital Service; twenty-seven insular quarantine and inspection stations, and thirty-three inspection stations in foreign ports. In addition to this the Domestic Quarantine Division has charge of all questions which arise in connection with the interstate transmission of disease and the management of epidemics.

(b) *Immigration.*

The medical inspection of all immigrants arriving in this country is now made by the medical officers of the Public Health and Marine-Hospital Service of the Treasury Department, who are detailed for that purpose. This is at present done under the immediate control of the Division of Domestic Quarantine as above. The officers detailed for this duty receive their orders from the Public Health and Marine-Hospital Service, and are paid through that service, but out of the funds of the Immigration Service, Department of Commerce and Labor. They report directly to the Division of Domestic Quarantine, Public Health and Marine-Hospital Service, and are subject to the regulations of that service. This system has been in existence twenty years and has been found to be very satisfactory. In addition, at times when the importation of such diseases as cholera, plague, etc., are especially to be feared, officers are stationed at foreign ports, attached to the consulates, for the purpose of inspecting immigrants who are about to embark for the United States, and a similar inspection is maintained at all times at such places as Yokohama, Hong Kong, Amoy and Naples.

(c) *International Sanitary Relations.*

At present the government maintains international sanitary relations under the International Sanitary Convention of Paris, of which the United States is one of the ratifying powers, and through the International Bureau of American Republics. The relations with European countries are maintained through the International Bureau of Public Hygiene of Paris, established under Article 181 of the above mentioned convention, in which bureau the United States government is represented by an officer of the Public Health and Marine-Hospital Service delegated for that purpose. The international relations with Mexico and the Central and South American states are maintained by means of international sanitary conventions which have been held from time to time under the auspices of the International Sanitary

Bureau of American Republics, of which convention the Surgeon General of the Public Health and Marine-Hospital Service of the Treasury Department is the chairman.

At present the international relations are still very largely in a formative state, but the rapid progress being made in the matter will make it necessary very soon that provision be made in the national health organization for a subdivision to handle the questions arising in connection with international relations, and when such a division or subdivision is established it would be logically located in the bureau or Division of Quarantine and Immigration.

(d) *Management of Epidemics.*

As already stated, the management of epidemics is at present in charge of the Division of Domestic Quarantine of the Public Health and Marine-Hospital Service of the Treasury Department, and would be naturally, continued in any enlarged public health organization in that division, as a subdivision of the Bureau of Quarantine and Immigration.

(e) *Philippines and Isthmus.*

As already explained, the maritime quarantine in the Philippines and on the Isthmus is under the direction of the Division of Foreign and Insular Quarantine of the Public Health and Marine-Hospital Service of the Treasury Department, but in addition, there are very important public health functions performed by the same division in connection with the government of the Philippine Islands. The public health work there, as distinct from the maritime quarantine, is under the control of the Insular Government through an officer known as the Director of Public Health. At the present time this position is filled by an officer detailed from the Public Health and Marine-Hospital Service of the Treasury Department who combines with his function of Director of Health under the Insular Government, the position of Chief Quarantine Officer for the Philippines under the Public Health and Marine-Hospital Service of the Treasury Department. This arrangement is at present not a matter of law but is subject to change by the President.

In any new or expanded national public health agency the functions described above under the second heading of the administrative side (Quarantine, Immigration, International, Sanitary Relations, Managements of Epidemics, and Philippines and Isthmus,) would necessarily have to be carried on exactly as at present. As far as I can recall, none of the plans which have been suggested for such a new or expanded organization have suggested the addition of any functions in regard to matters connected with quarantine, immigration, international sanitary relations, management of epidemics, or the Philippines and Isthmus, and as the present arrangement works satisfactorily and is capable of future expansion by presidential regulations, and without the need of special legislation, it does not seem to be necessary to make any suggestions in connection with it.

III. Bureau (or Division) of Governmental Hospitals.

(a) *U. S. Marine Hospitals.*

- (1) MARINE HOSPITALS AND DISPENSARIES.
- (2) MEDICAL OFFICERS FOR REVENUE CUTTERS.
- (3) PHYSICAL EXAMINATION FOR ENLISTMENT, REVENUE CUTTER SERVICE.
- (4) EXAMINATION OF SIGHT AND HEARING OF PILOTS AND MASTERS.

- (5) PHYSICAL EXAMINATION FOR LIFE SAVING SERVICE.
- (6) SERVICE TO BE RENDERED IN TIME OF WAR.

The management of the U. S. Marine Hospitals is now under the charge of the Division of Marine Hospitals and Relief, Public Health and Marine-Hospital Service of the Treasury Department, and this division also has charge of the other five classes of work mentioned above. Through it are provided the medical officers for the Training School of the Revenue Cutter Service and those who serve on the larger seagoing cutters. At the present time about 10 per cent. of the officers of the lower two grades of the Public Health and Marine-Hospital Service are serving at sea under these details. In addition the service makes all the physical examinations for enlistments in the Revenue Cutter Service and provides the medical officer for examining and retiring boards of that service. The examinations as to color sense, acuteness of vision and hearing, which are now prescribed by law for all applicants for license as masters or pilots of vessels, are conducted by this service, as also are the annual physical examinations made for the crews of the Life Saving Service. In the marine hospitals are cared for the sick of the merchant marine, the Revenue Cutter Service, the Life Saving Service, the civilian crews of the vessels of the Quartermaster's and Engineer's Departments of the Army and of naval colliers, officers and crews of the vessels of the Coast and Geodetic Survey and Mississippi River Commission. In addition the hospitals care for foreign seamen on the request and at the expense of the government to which they belong. The law also provides that in time of war the president can make use of the commissioned medical officers of the Public Health and Marine-Hospital Service of the Treasury Department as he may determine, and such officers have rendered services of this character in action during the Spanish War, and in the Philippine Insurrection.

As it is presumed that the functions outlined above will continue to be performed in the same manner under any new or expanded public health organization, it does not seem necessary to make any suggestions in connection therewith.

(b) *U. S. Hospital and Baths, Hot Springs, Ark.*

The present situation at the Hot Springs of Arkansas is that the United States Hospital there is maintained for the treatment of officers and men of the Army and Navy, and the officers of the Public Health and Marine-Hospital Service, and is under the control of the War Department. Some of the bills now pending propose to transfer the conduct of this hospital to the new or expanded public health organization, and if such action be taken, the management of the institution would logically come under the bureau or division charged with the operation of similar government institutions. I have therefore placed it under this heading.

(c) *Medical Service, U. S. Soldiers' Homes.*

At present the medical service at the Soldiers' Homes is under the control of the Department of the Interior, but if transferred to the control of the new or expanded public health agency would naturally come under the jurisdiction of the bureau or division under which I have placed it.

(d) *Hospitals for Immigrants.*

At present the hospitals for immigrants are under the control of the Bureau of Immigration, Department of Commerce and Labor, but the medical officers are detailed from the Public Health and Marine-Hospital Service of the Treasury Department, so that they too, if transferred as suggested in some of the bills, would be placed under the bureau or division which we are considering.

(d) *Government Hospital for the Insane.*

The management of the Government Hospital for the Insane is at present vested in the Board of Trustees and is under the direct control of Congress.

Whether or not the various institutions enumerated under the last four subheads (*b*, *c*, *d*, and *e*) should be transferred to the control of the national public health organization is a grave question. The Government Hospital for the Insane is practically the local insane institution for the District of Columbia, although it also cares for the insane of the Army and Navy, and the beneficiaries of the Public Health and Marine-Hospital Service. I am unable to express an opinion as to whether it would be best to leave matters as they are, or transfer this institution to the public health organization. The same is true in regard to the Hot Springs Hospital and the soldiers homes. I think, however, that as the medical inspection and treatment of immigrants is now done by the Public Health and Marine-Hospital Service it would be logical to transfer the management of the hospitals themselves to that service, or rather to the national public health organization of which the Public Health and Marine-Hospital Service will be a part. The present arrangement, it is true, works fairly well, but it certainly would seem desirable that the general management of a hospital should be under the same jurisdiction as that which supplies the medical service.

IV. Bureau (or Division) of Applied Sanitation and Sanitary Engineering.

(a) Interstate Sanitation.

(1) WATER COURSES.

Except for the extensive surveys made by the Geological Survey the only work done in this connection at the present time is indirect, as detailing officers of the Public Health and Marine-Hospital Service, Treasury Department, for service on bodies such as the Lake Michigan Water Commission, or incidental to investigations by the same organization of typhoid outbreaks, or by the Hygienic Laboratory of the same service as in the Sanitary Survey of the Potomac Watershed, and in daily bacteriologic examinations for the Washington filtration plant.

(2) RAILWAYS.

Except in connection with the management of epidemics by the Division of Domestic Quarantine, Public Health and Marine-Hospital Service, Treasury Department, the government exercises no control over the sanitation of railways.

(3) SHIPPING.

In times of threatened invasion by such diseases as cholera the Division of Foreign Quarantine, Public Health and Marine-Hospital Service, Treasury Department, has charge of the sanitary conditions of vessels sailing from foreign ports for this country, and in times of epidemics the Division of Domestic Quarantine of the same service, assumes charge of interstate shipping. The general control of regulating the sanitary conditions on vessels, air, space, ventilation, food and water supply, character and amount of medical attendance, medical supplies, etc., is under the charge of the Bureau of Navigation of the Department of Commerce and Labor.

How far the government may go in the direction of controlling the sanitary conditions in navigable interstate lakes and streams is a legal question. Under the notes in connection with the subheading "Disposal of Wastes" I have pointed out several reasons which seem to me to justify the opinion that contamination of navigable waters is a proper matter for government regulation, and it is not necessary to repeat them here. Certainly it does not seem reasonable that on the Great Lakes, for example, the general government should prevent the states which draw their drinking water from the lakes from exercising any control over the contamination of those waters by shipping, and yet be power-

less itself to take steps for the prevention of the contamination. With this in view I have included water-courses as a proper matter to be embraced in the plan for a national public health organization. It must be admitted, however, that in the case of non-navigable interstate waters the matter can hardly be one for regulation by the general government. Fortunately the Constitution, while preventing direct relief by the government in such cases, has provided a way for adjusting the matter by a congressionally sanctioned agreement between the states concerned, and the court decisions in the Georgia-Tennessee copper fumes case have indicated how a state may force another to either cease polluting a mutual water supply or else join in an agreement for the regulation of the matter. As to the right to regulate the sanitary conditions on interstate railways, there does not seem to be any dispute. The Act of 1893 authorizes the Secretary of the Treasury to make rules and regulations necessary "to prevent the introduction of infectious and contagious diseases from one state or territory into another state or territory" but imposes no penalty. It would seem that all that is needed is the rectifying of this omission to give a national public health organization all the law it needs. In the matter of shipping, it seems clear that execution of the portions of the "Passenger Act" which relate to sanitary matters on vessels should be taken out of the jurisdiction of the Bureau of Navigation, Department of Commerce and Labor, and placed under the control of the national public health organization.

(b) Public Buildings.

There is at present no central agency in charge of the sanitary condition of Public Buildings. The Division of Sanitary Research, Public Health and Marine-Hospital Service, Treasury Department, has done some work in connection with the ventilation of the Capitol, and has investigated by a commission the conditions as to tuberculosis in the buildings of the executive departments in Washington, but the tendency has been for each department, or in the case of the very large buildings, the superintendent or custodian, to look after its own sanitary affairs.

It would seem to be desirable that the national public health organization should have at least advisory control of the sanitary problems which arise in connection with the large public buildings—possibly by means of a system of inspections; possibly by merely providing a method by which the superintendent or custodian could apply to the national public health organization for advice, or expert assistance. I doubt very much if it be expedient at present to try to do more than this. Every executive department will have a natural hesitancy in surrendering any actual control in its own territory, while they might be glad to get advice on occasions. In time the control of the sanitation of government buildings should be placed under the control of the public health organization.

(c) Assistance to State and Local Authorities.

Assistance in public health matters other than by publications, correspondence or laboratory research has, as far as I am aware, been given very rarely, if ever, by national agencies to the public health authorities of states and municipalities, except by the bureau of Animal Industry, Agricultural Department, and by various divisions of the Public Health and Marine-Hospital Service of the Treasury Department. The former agency had done a great deal of field work in aid of states, as, for example, tuberculin testing of dairy cattle destined for particular states, or in investigating outbreaks of animal diseases for.

or in cooperation with, state authorities, the most extensive work being in connection with Texas cattle-fever. The work of the Public Health and Marine-Hospital Service along these lines has been very extensive in the direction of assuming direct charge of local epidemics, and by taking up, at the request of state or local authorities, the field investigation of some particular condition. The work along the latter lines has been, of late, especially extensive.

OMISSION OF CERTAIN ACTIVITIES

In the outline given for the organization of a new or expanded public health organization I have purposely omitted, for reasons given below, a great many of the things which have been mentioned in the hearings and discussions as properly within the scope of such an organization, and included therein by the terms of some of the pending measures, as: education, child investigation, medical service of Indian reservations, etc.; and some, such as the establishment of biologic standards, the study of venereal prophylaxis, and the like, because putting them in the law is equivalent to directing that some of the divisions of the organization shall study the things they would be created to study, and furthermore those who are to be in charge of the work to be done should be given an opportunity to develop it along the lines which experience may prove to be best fitted to secure a coherent and logical plan of advancement and *pari passu* with the training and development of the necessary personnel. To prescribe too minutely the subjects for investigation and control will immediately result in an uneven and unbalanced development. Education, child study and the like I have omitted because I have tried to keep in view throughout, the fundamental idea that the law creating the new or expanded public health organization should be drawn in such a way as to avoid as far as possible raising the issue of interference with the powers reserved to the states, and so I have tried to keep pretty close to the lines of precedent in public health legislation. It would be most unfortunate to have some important portion of the new law promptly set aside by the courts. When the new organization is once firmly established and functioning it can be cautiously expanded by amendments which, if found unconstitutional, could be dropped without damaging the legal foundations of the main structure.

CONSTRUCTION OF NEW ORGANIZATION

Coming now to the question of how the machinery of the new organization shall be constructed to secure the performance of the duties grouped under the above suggested plan, it would appear that only two plans of organization are possible; to consolidate the activities, whether resulting from transfer or creation, with the Public Health and Marine-Hospital Service under some form of departmental or bureau organization, or, to consolidate such transferred or created activities into the Public Health and Marine Hospital-Service under either the present form of control or under some new arrangement.

THE QUESTION OF THE HEAD

This brings us to the question of the head. Four plans are possible:

1. A cabinet officer presiding over a new executive department.
2. An assistant secretary reporting to the head of one of the existing departments

3. A Director-General of Public Health, or a Commissioner of Public Health, of permanent or semipermanent tenure of office presiding over an independent organization and with a status similar to that of the former Commissioner of Agriculture, and reporting directly to the President.
4. A permanent, or semi-permanent, director-general or similar official reporting directly to the cabinet minister at the head of one of the existing executive departments.

ADVANTAGES AND DISADVANTAGES OF EACH PLAN

The first plan is the one about which most has been said, and beyond doubt a just appreciation of the magnitude of the interests involved must lead to the conclusion that these interests are worthy of having a department. Unfortunately there seems to be much opposition in administrative and congressional circles to any increase in the number of the executive departments. The possibilities of overcoming this opposition, and the methods by which it might be overcome, are outside of the scope of this paper, so I shall only briefly mention the advantages and disadvantages of this plan. The principal advantages would be that a departmental organization would give a status to its chief that would enormously increase his prestige with Congress, and his influence and authority in dealing with international and interstate questions; that it would considerably simplify some of the questions arising in connection with the transfer from other departments of the larger activities which have been the subjects of discussion, since there would be no questions of precedence to settle, and would enable the department head to deal directly with other department heads in obtaining data resulting from the researches of agencies working in these departments, in securing cooperation in the larger administrative questions, and in facilitating such joint activities—as for instance the immigration inspections. The disadvantage is that the choice of the department head would not improbably be influenced by geographic or political considerations rather than by the qualifications required of a man who would preside over a semi-scientific department.

The second plan, an assistant secretary reporting to the head of one of the existing departments, seems to be open to some very serious objections. The assistant secretary would have to submit questions of policy, legislation or appropriations to the attention of the President and Congress through the intermediary of a department head who might, through lack of either knowledge or sympathy, fail to present them to the President and to Congress in a manner best calculated to secure the ends in view. Whatever department were chosen, the work for the prosecution of which the department in question was created, and for his fitness in administering which the department head had been chosen, would naturally engage most of that chief's attention and lead, unintentionally, perhaps, but still inevitably, to a neglect of the public health interests. If, on the contrary, the department chief took an active interest in the public health work it is exceedingly improbable that he would have the training and knowledge necessary to make the results of his interest and interference advantageous. Moreover, it would involve the possible danger that external interests, political or commercial, would exert pressure on the departmental chief that might be exceedingly disadvantageous to the interests of public health efficiency. Furthermore, it would involve a good deal of lost motion in the machinery of the public health organization by the interposition of an additional

gearing between the machine, as such, and the source of its power in presidential and congressional support.

The third plan seems to be, by all means, the one to be followed, but unfortunately is opposed to congressional policy, which is strongly against creating agencies independent of one of the executive departments. It would avoid all the disadvantages outlined in the discussion of the first and second plans, and would possess some advantages of its own, the chief of which would be that it would promote efficiency by definitely fixing the personal responsibility for it. If the plan of organization is followed by which the transferred and newly created agencies are consolidated *with* the Public Health and Marine-Hospital Service, it would, by the independence and dignity of the position of the director or commissioner, attract a better equipped class of candidates than a subordinate assistant secretaryship of anomalous position, and render it much less likely to be the reward for political services. If, on the other hand, the plan is adopted of consolidating the transferred and newly created agencies *into* the Public Health and Marine-Hospital Service the Surgeon-General of that service will either fill the position of director, or commissioner, himself, *ex-officio*, or will be the executive officer of the organization, serving under the director or commissioner, very much as the Chief of Staff serves under the Secretary of War, and in either case the advantage of long tenure of office for the executive will be added to the advantages above enumerated as inherent to the third plan.

As already stated, I am of the opinion that the third plan suggested is the best at the present time, but it is directly against the pretty general trend of congressional policy and probably would arouse as much, or even more, opposition than the establishment of a new department. For this reason I offer the fourth plan of organization. It would be the easiest from a legislative point of view, since it would be practically an amplification of the existing relations of the Public Health and Marine-Hospital Service with its departmental chief, but with the very important difference that its head would by law report directly to the head of the Department concerned, and not, as often has been the case in the past, to a second or third assistant secretary.

The permanency of tenure would eliminate most of the objections inherent to the plan of having an assistant secretary, but the difficult personal equations in handling the chiefs transferred along with activities under their control in existing departments would remain to be solved, and undoubtedly this form of organization would not satisfy many who are actively engaged in the present agitation for increase in the national public health activities.

SUGGESTIONS AS TO DRAFTING BILL

In conclusion, a few suggestions are offered as to the general plan to be followed in drawing a bill designed to embody in law the plan for such an organization as I have outlined:

First, the law should be as brief as possible, and should be confined to the declaration of certain basic legislative intentions, leaving the details to be arranged by regulations to be promulgated by the President. Such expression of legislative intentions should include: (a) Provision for the creation of a department, bureau or service, as may be determined on, with a declaration of the fundamental principles in accordance with which the new department, bureau or service is to be organ-

ized; i. e., either for a consolidation of the activities to be transferred or created with, or into, the Public Health and Marine-Hospital Service; (b) provision for the head of the new department, bureau or service, whom he shall be, how he shall be appointed, his tenure of office and compensation; (c) an enumeration in the fewest possible words of the duties to be performed, as, for instance, "the investigation and management of all matters relating to the public health as now or hereafter authorized by law or by this act"; (d) provision for the continuance of the personnel of the various existing agencies affected, for their salaries, allowances, etc., and provision for the personnel of any newly created agencies; (e) authorization for the necessary clerks, etc., without stating salaries or numbers; (f) continuance in general terms to the various agencies of the special authorities and duties now vested in them by law; (g) continuance of the availability of all appropriations, funds, etc.

Second, it should for the present only transfer or consolidate existing or new agencies that are not the subjects of serious dispute on grounds of either expediency or constitutionality. The Pharmacological Laboratories of the Bureau of Chemistry, Animal Industry and Plant Industry, Agricultural Department,¹ and the Library of Medicine and Surgery, War Department, are illustrations of the first class, and the study of the disposal of wastes with reference to their effects on interstate, water borne commerce and the health of those engaged therein, is an illustration of the second class.

Third, in order to provide for the question of existing activities, the expediency of transferring which is the subject of much dispute, as for example, certain parts of the Bureau of Animal Industry, Treasury Department, a provision should be inserted authorizing such transfers within one year by Presidential order and providing for a commission or committee of departmental chiefs, or delegated subordinates, who shall advise the President of their findings after investigating each case referred to them, but whose advice shall not be binding on him. The law creating the Department of Commerce and Labor contains a provision somewhat similar to this, but if in the case under consideration this is thought to savor too much of the delegation of legislative authority, the President might merely report his findings for the approval of Congress. All this sounds reasonably simple but it will involve a careful study of a large number of existing laws and no little legislative ingenuity to secure the results wished without the loss of something desirable.

There is much diversity of opinion as to the expediency of having an advisory board associated in any way with the management of the new agency. It is urged that it would strengthen the hands of the director or commissioner in public estimation if he had the support of a board of distinguished and disinterested advisors of national reputation, and perhaps it would, if he had it; but suppose that for reasons political, professional or personal, the board were not disinterested? On this point I venture to obtrude my personal opinion that no board should be given authority to meddle in any way with the management of the organization as a whole.

One more expression of opinion I desire to make, concerns, in general terms, the character of the activities to be transferred to the new agency. No activity should, for the present, be transferred whose work is of such a

1. See testimony of Dr. Wiley, p. 110, Senate Hearings on S-6049.

nature that its incorporation in a national public health organization will lead at once to the concentration on that agency, its personnel and its work, of the interested attention of powerful commercial and political interests. No matter how great the economic advantages resulting from public health work, nor to what extent it is clothed for constitutional reasons in the garb of commercial justification, the fact remains that its real objects are altruistic and humanitarian, and with these the politics of personal interest will not mix, though they may discolor them.

In conclusion I deem it proper to state that this article is in no sense inspired by Surgeon-General Wyman or to be construed as an expression of his opinions. It has not been submitted to him, nor has he been informed of its contents. It owes its publication simply to a personal desire to provide a basis for a discussion of a question that is of vital interest to the public and fundamental to the health and lives of the people of the United States.

EXTRACAPSULAR FIXATION OF THE MOVABLE KIDNEY *

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The word "extracapsular" is used in the title of this paper to imply fixation of the kidney by a method entirely external to the tunica fibrosa as distinguished from any method that implies either invasion of that tunic or surgical injury to the kidney itself.

The further significance of the term as it is here used may be made clear by a brief description of the essential features of the operative procedure that I have employed for the last several years—indeed, since 1904—for the anchorage of the pathologically movable kidney,¹ as follows:

TECHNIQUE OF EXTRACAPSULAR NEPHROPEXY

1. The patient is placed in the classical position on the well side with a firm pad, preferably pneumatic, under the same side. The equally classic incision about 1 cm. below the costal margin and about 10 cm. in extent is made obliquely downward and forward. This dissection is carried through the wall by cutting with the exception that, to the extent that may be found practicable in each individual case, the obliquus externus, the obliquus internus and the transversus abdominis muscles are separated and drawn apart by the finger rather than divided by the knife. In this way the capsula adiposa of the kidney is reached.

2. The capsula adiposa is a most important structure in my procedure; and the very first point that I wish to emphasize is that extreme care must be taken to separate it from its relations to the abdominal wall, to the extent that such relations may have survived the displacement. Care must be taken not to separate the capsula adiposa from the tunica fibrosa.

3. The kidney with its capsula adiposa attached to it is then lifted to the surface. In carrying out this manipulation it may be and generally is necessary first to deliver the upper pole of the organ through the operation wound, for reasons that I shall later explain.

4. The next step in the operation consists in wiping away the globular fat, much or little, from the con-

nective tissue stroma of the capsula adiposa. This stroma, likewise important in this procedure, will be found arranged in very distinct and essentially parallel striae extending obliquely downward and forward from the lower pole of the kidney. The manipulation of wiping the fat from its meshes is best carried out by the use of gauze, care being taken not to separate these striae from their attachment to the tunica fibrosa.

5. Gauze is now likewise employed to apply vigorous friction to the tunica fibrosa in its upper zone where the capsula adiposa but rarely invests it; but if it does the fat should be wiped away if possible without disturbing the attachments of its basic connective tissue striae. This friction to the tunica fibrosa should be continued until the upper zone shows small punctate hemorrhages over its entire area.

6. The kidney is now left for a few moments while any remnant of the capsula adiposa that may have been left adherent to the abdominal wall is entirely wiped away with gauze.

7. A nest—*nidus renalis*—free from fat—having thus been secured, the kidney is slipped back as nearly *in situ naturali* as it will go without force.

8. The connective tissue striae of the capsula adiposa are then divided transversely at a distance of from 1 cm. to 2 cm. from the lower pole of the kidney. The stump thus formed on the renal side is stitched by chromicized catgut to the inner surface of the upper margin of the operation wound while the lower stump is similarly attached to the inner surface of the lower margin of the operation wound.

9. The operation wound itself is then entirely closed by laminated sutures. Drainage, being unnecessary, is, of course, not employed.

In explanation of the various steps that I have described, more particularly those that are peculiar to this procedure, I beg to offer a few observations:

THE CAPSULA ADIPOSA AND ITS CONNECTIVE TISSUE STRIAE

The connective striae of the capsula adiposa, so essential to this procedure, require a few words of explanation, particularly as they, in an aggregate sense, and as an anatomic structure have so far very generally escaped recognition as being of practical importance. In my previous published remarks² on this structure—I have come to recognize these striae as an anatomic element—I stated that when I first noticed it I thought it was adventitious, and probably, of inflammatory origin and that I had used it because it was convenient and seemed to lend itself to unipolar fixation.

It now seems, from a recent somewhat exhaustive research of the literature, that my experience was not singular. Thus Hahn,³ whose observation extends back to his inauguration of the practice of kidney fixation in 1881, says that "fibers run from the tunica fibrosa in front and behind to the subperitoneal fascia." Newman, of Glasgow observes⁴ that "frequently in long-standing cases the fat becomes infiltrated with connective tissue, making it tough and fibrous and when this altered capsule is stitched to the parietes the kidney can be maintained in its position without suturing the organ itself." Carwardine, of Bristol, says:⁵ "It is common in cases of wandering kidney to meet with strong fibrous bands some of which require scissors or scalpel for their divi-

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.
1. Tr. Am. Assn. Obst. and Gynec., 1906, xix, 19.

2. Tr. Am. Assn. Obst. and Gynec., 1905-1906.

3. Deutsch. Ztschr. f. Chir., 1902, lxxvii, 354.

4. Glasgow Med. Jour., 1904, Series 4, lxi, 345 and 418.

5. Bristol Med.-Chir. Jour., 1905, xxiii, 24.