

II.

THERE are few subjects relating to the public health which have been more frequently discussed than the management of the quarantine service of the United States, and the recent outbreak of the yellow fever in the South has again brought this matter into prominence. Thus far the agitation has been mainly confined to those who have been directly or indirectly affected by the rigorous methods established at the seat of infection, but there is little doubt that the subject will attract the attention of the medical profession and Congress during the coming winter. This matter has so long been the subject of controversy that any legislation which will aid in securing an arrangement satisfactory to all will be received with favor. Inasmuch as the subject has been discussed largely on theoretical grounds, a consideration of it from a practical standpoint will not be out of place.

The quarantine system of the United States, which is generally understood as referring to the coast service, consists at the present time of fifty or more stations, of which all but ten or fifteen are comparatively small in size and connected with unimportant ports. Most of the entire number, including those at the larger ports, such as New York, New Orleans, and Boston, are under State or municipal control. Some of the smaller stations, particularly at Southern ports, have at different times been placed in the hands of the Marine Hospital Service, a branch of the Treasury Department of the United States. These stations, which were formerly in charge of the local authorities, were turned over to the government for lack of appropriations, or from apathy on the part of the health officials or community with which they were identified. The work performed at these points, however, is comparatively small. For instance, out of 12,127 vessels entered at seventeen quarantine stations (during 1896), including ports of larger size, 6,241, or more than one half, entered at the port of New York, 1,322 at New Orleans, and about 1,000 at Boston. Of 252,350 steerage passengers arriving in this country during the same period (1896), 190,928 arrived at the port of New York and were examined at the quarantine station at this place. Almost all of the remainder were received at other ports where State or municipal quarantine exists. It

will thus be seen that the quarantine service of the United States is practically in the hands of the State or municipal authorities. Most of these stations are well equipped with proper apparatus for the disinfection of ships, buildings for the care of the sick and those held for observation, and are in charge of experienced officers, who, as a rule, have been long in the service.

The occasional outbreak of yellow fever in the South, and the rigid and frequently unnecessary restrictions imposed by the health authorities at the seat of infection, and also in cities and towns some distance away, have caused considerable dissatisfaction on the part of the public, at least the commercial element of it. This is due principally to the annoyance and loss of business caused by the stringent methods employed to arrest the extension of this disease. The unsatisfactory condition has been aggravated by a want of harmony on the part of the health officials in charge, particularly in the smaller towns, who have apparently been unable to allay the fears of a certain portion of the citizens in their immediate localities. As a result, "shot-gun" quarantines have been inaugurated, trains stopped, railroad tracks destroyed, and fear has expressed itself in other ways which savor somewhat of the sanitary methods of the Middle Ages. Although, as a rule, these difficulties occur in inland towns, and have really nothing to do with the quarantine or coast service, it is the belief of some that the government control of the quarantine stations, that is, the substitution of Federal officers for those already in charge, would be the remedy for the evil above described. In the different outbreaks of yellow fever, smallpox, etc., which have occurred from time to time throughout the country, no specific charges have been made that they have been due to the carelessness of quarantine officials. In the present outbreak, the Louisiana State Quarantine on the Mississippi has neither received, nor is it deserving of, censure. The avenue through which New Orleans and other Southern towns have recently become infected is at present unknown. The charge that the disease came through the Federal Quarantine at Ship Island has not yet been proven. The vast extent of the United States coast furnishes ample opportunity for the illegal landing of small craft at some distance from a port of entry. In this manner infectious diseases may be introduced into the country. Refugees from Cuba have frequently entered the United States in this manner,

and it has been necessary for the authorities at Washington to detail vessels from time to time to watch the Southern coast to prevent the landing of these people. It is evident, therefore, that the appearance of an imported infectious disease in a community is not necessarily to be attributed to a lax or improper quarantine, and when we consider that the lack of uniformity in the regulations relating to the treatment of infectious diseases, which so seriously interferes with the business of the country, is mainly confined to the interior, particularly to small towns, and to the municipal sanitary administration of the coast cities, and does not appertain to quarantine, it seems strange that this matter has not been considered in a broader sense and a remedy suggested which will be far-reaching enough to affect the interior as well as the coast.

Those who advocate the government control of quarantine declare that the advantages to be gained are as follows:

First. A uniform treatment of all vessels and persons subject to quarantine.

Second. The prevention of the annoying and unnecessary regulations, which interfere with business and travel during an outbreak of yellow fever in the South.

Third. The abolition of fees which are now charged vessels for the support of quarantine, and the maintenance of this service by appropriations made by Congress.

It cannot be denied that in former years the treatment of infected ships, passengers, and crews was based largely on theory. The origin of infectious disease was unknown, and therefore the treatment was in a great measure empirical. The agents for disinfection were employed according to the opinions or experience of the official in charge, with no fear of criticism, as at that time none was competent to criticise. As a result, quarantine methods, not only in this country but throughout the world, were at variance with each other, and in a measure justified the censure and ridicule which were frequently expressed by the people. Within the past few years, however, a change has taken place, and a new era in marine sanitation has begun. Bacteriological researches have given us indisputable evidence of the germ origin of infectious disease. The pathogenic organisms have been carefully studied, and as a result a flood of light has been thrown on the methods for the care and treatment of these affections.

Following this work came careful and exhaustive investigations as to the germicidal power of various disinfectants. The result of this work has been satisfactory in the extreme, and recently the value of these agents has been very clearly defined. As a consequence, the manufacture of new and improved apparatus for disinfection with steam, formaldehyde gas, etc., is now carried on with great vigor in large centers. The change to which I have just referred removes whatever excuse may have formerly existed for the employment of erratic, impracticable, and unjust quarantine measures.

Those who are conversant with quarantine work fully understand that the same rules cannot properly or safely be applied to all ports. Each section has its own climatic conditions and peculiarities. The character of shipping and commerce differs, and methods which are admissible, practical, and just at Southern ports within the yellow fever belt cannot consistently be enforced at New York or Boston without deserved censure. It thus follows that certain differences in the requirements of quarantine regulations in the various sections of the country are not only admissible but imperative. This is not generally appreciated, and therefore is not taken into consideration when the subject of quarantine is under discussion. A careful consideration of the facts we now possess regarding marine sanitation will show that the tendency is toward quarantine methods which as far as practicable are uniform.

The second reason advanced by those who favor the direct control of the quarantine service by the national government is that the change will insure a harmony of action throughout the infected district; that "shot-gun" quarantine will be a thing of the past, and that the injury to business will be reduced to a minimum during the prevalence of yellow fever and other infectious diseases.

To those who do not appreciate the distinction between the quarantine service as it is now understood (*i. e.*, that which protects the coast) and the management of health matters in the interior, the second reason given is at least plausible, but when properly analyzed it is not only illogical but absurd. It is not rational to expect that a Federal quarantine officer, whose jurisdiction is practically at a port of entry, could consistently visit an interior town where an infectious disease existed, and

demand recognition as a health officer or even recommend himself as an arbiter. The inherent belief in local rights, if nothing else, would prevent it; with the characteristic energy with which Southerners usually resent interference, a suggestion of this character in that section of the country would probably be followed by ejection. If this were admissible, the United States government could with equal propriety send Federal troops, unasked for by State authorities, into interior towns to quell slight disturbances. Both State and municipal health officers are, as a rule, clothed with sufficient power, if properly and intelligently exercised, to protect their respective localities against infectious disease; this power they are usually jealous of, and they resent outside interference, particularly from one whose authority is not well defined. It is evident, therefore, that a Federal quarantine officer, with power at the coast only, could not be relied upon to create harmony among health officials in the interior.

The proposition to abolish the fee system, now depended upon for the support of the quarantine service, and to call upon Congress for large appropriations for this purpose, will probably not appeal to taxpayers or students of economy. The State quarantines are practically self-supporting. The fees, which are now comparatively small, are paid principally by foreign vessels. These vessels bring with them all classes of people, some of whom are frequently a menace to the health of the country. For the transportation of these people and also for the freight which is carried the owners of the vessels are well paid. It is pertinently asked, why should they not pay a reasonable fee for the inspection of their ships, and why should the Federal government be asked to appropriate money for this purpose.

To one versed in sanitary science it is inexplicable that a national control of the quarantine service should be specially advocated as a means of protecting the general health of the country, when the obstruction to business and travel, the enforcement of foolish and unnecessary rules governing the entrance and exit of persons and goods during the prevalence of infectious disease, are confined mainly to the interior towns, or at least to those places outside of the jurisdiction of quarantine officers.

In order to appreciate the absurdity of this it is only necessary to consider the great mortality in the interior, due to infectious diseases, which frequently results from carelessness and ig-

norance, not on the part of the people alone, but also of the health authorities. Small towns have been subjected to great loss of life by outbreaks of diphtheria. In one week fifty deaths have occurred in a place of two or three thousand inhabitants without causing much consternation outside the immediate locality, and without any action on the part of the government officials, who are so solicitous regarding the coast quarantine.

Serious outbreaks of typhoid fever are constantly occurring as the result of a polluted water supply. This occurs from year to year without any apparent concern on the part of the community affected. Another danger to which the public is exposed, particularly the infantile portion of it, is the milk of tuberculous cattle. When it is considered to what extent milk is relied upon as the sole nourishment of children, the gravity of this danger cannot be over-estimated, particularly as we know this disease to be very common among cattle, frequently involving 10 to 50 per cent. of an entire herd. Although bacteriological work has confirmed the danger from this source, but little effort outside of the large cities has been made to protect the consumers. The loss of life in the United States from yellow fever is absolutely insignificant compared with the deaths resulting from causes just enumerated. If it is necessary for the protection of the people, that the government should assume *direct* control of health matters at the coast, it is equally if not more important that it should take direct charge of the health of those living in the interior.

The recent outbreak of yellow fever in New Orleans and other Southern towns has been of a particularly mild character. The mortality has not exceeded 13 per cent., which is extremely low. At no time in New Orleans has the disease passed beyond the control of the efficient Health Department, the officers of which deserve praise for the energetic manner in which the emergency has been met. This much, however, cannot be said of the methods for protection employed by the health officials of some of the smaller Southern towns invaded by yellow fever. The want of harmony which has here prevailed, and the absurd and unnecessary rules enforced, have been followed by an irreparable injury to business, and it is not a surprise that the business community should demand some change which would prevent a repetition of the experiences which have followed the recent outbreak. This, however, is not the first time that this disease has

invaded the South, and although the lesson each time has been severe, it is rapidly forgotten ; otherwise, the construction of proper sewers and clean streets would be demanded. This, I am sorry to say, is not the case, nor is the importance of such measures fully appreciated. If Southern citizens and legislators, who are now clamoring for a change in the administration of the quarantine service, would expend the same energy in securing appropriations for the construction of proper sewerage systems, and means of securing good sanitary conditions, the danger from yellow fever would be reduced to the minimum, and the fear of this disease, which now prevents the proper execution of sensible health ordinances, would doubtless soon be a thing of the past.

It is evident that the substitution of a national quarantine system for the present one is not the remedy for the evil complained of. It is not sufficiently comprehensive. Therefore, the question arises, what change can be made which will best protect the public of this country against the danger and annoyance from infectious disease both at the coast and in the interior? I believe that the consensus of opinion of those who are best able to decide this matter is that the establishment of a National Bureau of Health offers the best solution of the problem. This bureau should be sufficiently distinct and separate from any other body in order that it may not be embarrassed in its work. Its functions should be to co-operate with State and municipal authorities, and to see that certain general health laws applicable to both the coast and interior are enforced. This body should assume direct control only on invitation or when the State or municipal officers are unable by reason of lack of funds, etc., to perform the work. This would insure a uniformity of action without interfering with the rights of the State or municipality, and would in a measure be educational. It has been suggested that this work be placed in the hands of the Marine Hospital Service ; this suggestion, however, is not seriously entertained by many who are fully conversant with the subject.

The Marine Hospital Service, which is a branch of the Treasury Department, and under the control of a Supervising Surgeon-General, was created for the relief of disabled American seamen. For this purpose hospitals, laboratories, etc., have been equipped in different parts of the United States. The character of this work demands the highest respect, and it would seem that, with

the facilities now at hand for the investigation of disease, ample employment could be furnished the medical officers of this service, particularly as scurvy, beriberi, and other like maladies which affect seamen are not as yet well understood. It is certain that the Marine Hospital Service is not properly constructed for the management of a national bureau of health in addition to its own work. It is so considered by the American Public Health Association and other medical bodies.

There is a matter to be considered which is of great importance, and which has a distinct bearing on this question. I refer to the proper education of medical men in this line of work. The majority of graduates of medical colleges leave these institutions without having seen a single case of any quarantinable disease; they know practically nothing of disinfection or disinfectants, or the care of infected ships or houses. Therefore, when they have been brought face to face with these conditions, they are frequently powerless to act. This is only too soon recognized by the public, and a want of confidence in a health officer of this kind is naturally followed by such excesses as shot-gun quarantines, etc. That the necessity for this education is appreciated by the profession is evident from the fact that a special course in the study of infectious disease and sanitation will probably soon be added to the curriculum of the different medical colleges.

ALVAH H. DORT.

III.

THE recent epidemic of yellow fever in the South has fully demonstrated that State and municipal health authorities are inadequate to prevent the entrance and spread of infectious and contagious diseases, and has emphasized the necessity of national action in dealing with cholera, yellow fever, smallpox and the plague. So far, the most efficient means of preventing the entrance and spread of these exotic diseases is unquestionably the enforcement of strict, scientific quarantine and sanitary regulations.

The numerous conflicting and, in many instances, ridiculous quarantine regulations, formulated by State, county, and muni-