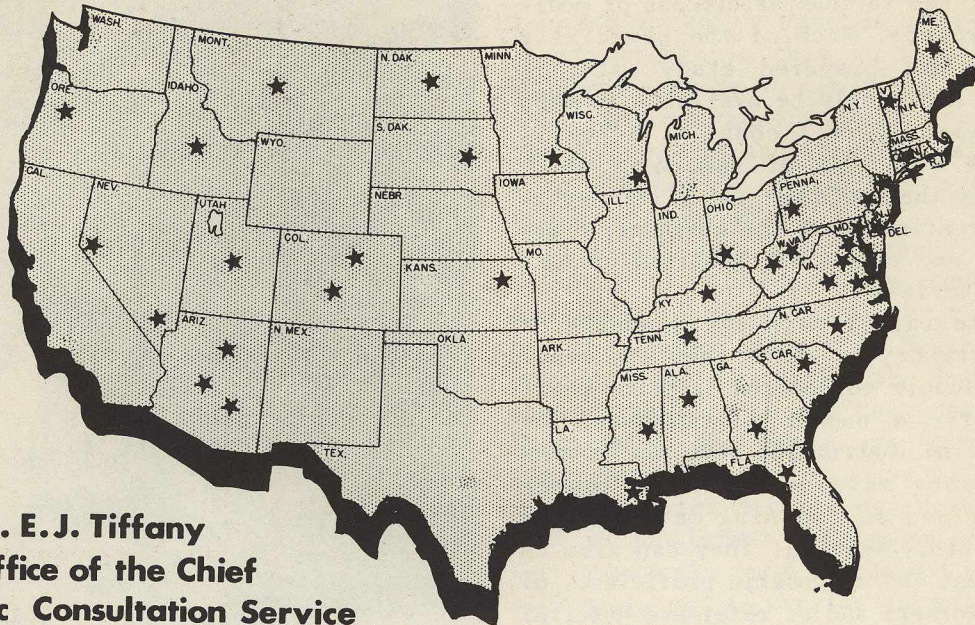


# Consultation Services



The Laboratory Division is prepared to render consultative services when a problem of laboratory diagnosis arises anywhere in the continental United States or in one of the Territories. The services are available when and where needed, and are rendered only upon request of local agencies for advice or assistance in coping with diagnostic problems which appear to be beyond the reach of their own facilities. Such services have been given on 35 separate occasions since the Laboratory Division was organized.

In some instances, the request for consultation has arisen from an unusually high reported incidence of disease where investigation subsequently showed that the local problem was one of inaccurate diagnosis rather than one of epidemic disease or actual increase in the number of cases. Early last year an unusually large number of cases of amebic dysentery was being reported from areas in two States. On invitation by local authorities, the prob-

lem in these areas was investigated by consultants from the Parasitology Branch of the Communicable Disease Center. In both instances it was found that mistaken laboratory diagnoses resulted from failure to distinguish between the pathogenic *Endamoeba histolytica* and the several species of harmless nondisease-producing amebae which are regularly present in the intestinal tract. Here the problems were educational. The measures adopted for improvement of the situation in these two instances are illustrative. Parasitologists from the Laboratory Division went to one State and gave a short training course in the laboratory diagnosis of amebiasis consisting of lectures, laboratory demonstrations, and laboratory exercises, to a class of 37 technicians from laboratories in that area. In order to encourage still further the maintenance of a high level of accuracy, extension service materials for test diagnoses were sent to these individual technicians at regular intervals.

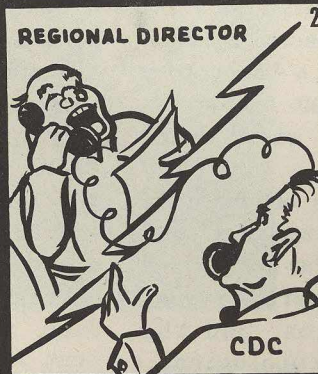
Since diagnosis of disease can never rest entirely with the laboratory, an evening session on amebiasis was held with the local physicians in order to acquaint them with some of the problems and limitations of laboratory diagnosis and to help correlate the laboratory with the clinical aspects of the problem.

In the other State the situation was somewhat different. Numerous cases of amebiasis were being reported from the vicinity of one of the larger cities by one physician who, with commendable enterprise and energy, was making his own microscopic examinations and diagnoses. However, this physician was, in all good faith, the victim of the same difficulties of recognition. The problem was resolved by extending to that area the regular reference diagnostic service of the Parasitology Branch, and by arranging for a technician from the nearby State branch laboratory to attend the course given in Atlanta by the Laboratory Division on the laboratory diagnosis of the parasitic diseases.

In 1945 and in 1947 there were outbreaks of dysentery in mental institutions in Alabama and in Ohio. These institutional epidemics received intensive on-the-spot study by teams of consultants from the Atlanta laboratories. The investigation of the outbreak in Ohio was joined by the Epidemiology Division, CDC, by the National Institutes of Health, and by the Ohio State Department of Health.

• CONSULTATION SERVICES

"My Day"



In both institutions an unusually high incidence of parasitic infection was discovered among the inmates. A similar field investigation was made in 1946 of a reported epidemic of diarrhea in Mississippi.

During the past year other occasions have arisen calling for consultation in the fields of diphtheria and tuberculosis diagnosis. A consultant from the Bacteriology Branch investigated one outbreak of diphtheria, only to discover that little or no diphtheria actually existed and that local apprehension was based entirely on incorrect laboratory diagnoses and faulty procedures.

Two other State laboratories with active services for the diagnosis of tuberculosis asked for assistance in determining why their laboratory bacteriology findings were not in line with what would normally be expected in regard to colony morphology and incidence of positive specimens. In both instances it was possible for a Laboratory Division consultant to point out the deviations from good technique which were responsible.

In the summer of 1947 there occurred in southwestern Louisiana an extensive outbreak of encephalitis among the horses and mules of that area. There were several instances of human infection, and the situation presented an epidemiological, diagnostic, and public health problem of great importance. The facilities of the Virus Laboratory in Montgomery were used. Consultants from that laboratory and the Epidemiology Division were sent into the epidemic area; there, tissue and serum specimens were taken from diagnosed and suspected cases, as well as from apparently normal individuals and animals. Examinations made in the Montgomery Virus Laboratory showed the causative agent to be the virus of Eastern equine encephalomyelitis.

In April of 1948 a call for assistance was received from a Federal institution in the Midwest for what appeared to be a relatively mild but troublesome enteritis outbreak. The authorities of this institution were apprehensive lest this mild epi-

demio might mean that there was a serious fault in the sanitary regime. Consultants from the Bacteriology Branch, familiar with the laboratory diagnosis of acute enteric disease, were on the way by plane in a few hours carrying a considerable supply of necessary equipment and special culture media. They spent approximately 2 weeks in the hospital laboratory, making some 190 examinations on 137 of the inmates who had been previously involved, who became ill while the investigation was in progress, or who were concerned with the preparation and handling of food.

In July 1948 an important town in the Virgin Islands appeared to be threatened with a serious outbreak of typhoid fever. Nine cases were reported as having been confirmed by laboratory examination, and a telegraphic request was received by CDC for diagnostic assistance. We were asked to send one or more consultants immediately to the area, prepared to set up and operate a temporary laboratory for the identification of the typhoid bacillus or other enteric bacteria and for the proper evaluation of the local water and milk supply.

Within 24 hours, arrangements had been completed, by wire and by telephone, through public health facilities in San Juan, to have equipment and special media sent from Puerto Rico. At the same time, a consultant left Atlanta by air. Within 16 hours he was on the spot, and within 10 days he had completed his investigation. It was found that there was in fact no epidemic of typhoid fever or other enteric infection and that the reports had been based upon the mistaken interpretation of laboratory technical procedures.

Laboratory diagnosis as performed by State or city laboratories is generally at a fairly high level of accuracy, and yet it would seem that people everywhere are equally deserving of accurate public health diagnostic service. We live in an age of scientific medicine. It is difficult, particularly in the field of infectious disease, to make valid diagnoses without laboratory support of one kind or another. The

best physicians have come to rely more and more upon assistance from the laboratory. A State department of health is no stronger than its laboratory division, and yet in some States the laboratory is treated as a stepchild. The quarters may be crowded and antiquated—firetraps in some instances—the equipment out of date, and the staff overworked and underpaid.

In this connection we should speak of a second type of consultation service which the Laboratory Division has made available through the Bureau of State Services and the Public Health Service Regional Offices. This service takes the form of laboratory surveys and program reviews, performed by Laboratory Division consultants for a State or city health department at its own request or as a part of a State health department program review for the Regional Office. A laboratory survey consists of a thorough examination and evaluation of a health department laboratory, both from the point of view of administration and of technical procedures used. A program review is pointed more to administrative, budgetary, and program planning with less emphasis on techniques. However, all aspects of the laboratory organization and service are weighed. What portion of the laboratory funds is supplied by the State and what portion from Federal sources? Is the State bearing a fair share of its own expense or does it lean too heavily on Federal support? What is the salary scale? Is a State Merit System in force governing appointment, tenure, and advancement? Is the State laboratory service well distributed through the agency of branch laboratories? Are branch laboratories needed?

What of the technical procedures? Are they in line with good modern laboratory practice? Are the technical workers well

trained? Have they a good educational foundation and formal training in this work? Does the State laboratory provide for in-service training of its personnel—does it support a program of research? These are examples of the phases of the problem vital to the operation of a good laboratory.

Since 1946 laboratory surveys or program reviews have been completed in 2 cities and in 23 States from Oregon to Florida and from Arizona to Vermont. Additional requests for review have been accepted from 10 other States and 3 cities.



It has been rare indeed to find a State laboratory without administrative and technical problems of one kind or another and which is up-to-date with respect to all procedures. However, almost without exception the directors of the laboratories are good administrators and able bacteriologists, who themselves recognize what should be done. Often an outside observer is able to see aspects of a problem which quite escape those who are constantly working with it. Adequate funds and quarters are frequently

lacking and State legislatures are not always well informed as to the vital importance of the State laboratory.

At the conclusion of a survey or program review, a report is made embodying the observations and recommendations for improvement. These consultative services are rendered in the spirit of a cooperative venture. The Laboratory Division shares with all the public health laboratories the common desire to promote and further the quality and variety of diagnostic services available to the public. Whether these services emanate from a public or private laboratory is of little importance. What is important is that every sick individual and every physician in this country have readily available to him adequate diagnostic laboratory services.