The increasing opportunities for full time clinical teachers and investigators, along with the tendency to include a fifth clinical year in the medical course, are factors which will obviously tend to make it still more difficult to attract the medical graduate into the laboratory subjects.

Lastly, the question of university salaries is a vital one, but let us not be deceived into thinking that this is the only element involved in keeping medical men out of the laboratories. The conditions mentioned above are certainly of great importance. Proper salaries, however, will do much to put the laboratory teacher on a more efficient and dignified basis. There are still two opposing parties in the campaign for the "full time" clinical teachers, but there is a single fusion ticket which every one favors for the "full paid" laboratory teacher. The directing professor of a laboratory department in the leading medical colleges should receive a $10,000 salary, and other members of the department should be paid accordingly.

There must always be two parties to medical progress, the individual, it matters not who, contributing the fundamental discoveries, and the doctor of medicine, with a keen appreciation of the significance of things, to apply the discoveries in practice. The physician will appreciate the more keenly when he is trained by the best masters in the principles of the sciences which are certain to contribute the discovery.

HOSPITALS OF GREECE

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Reports received in Washington, prior to the sailing of the American Red Cross Commission to Greece, laid emphasis on the needs of the Greek hospitals, which were said to be overcrowded and short of supplies and equipment. Following up this information I made a careful study of the hospital situation as one of the first duties of the commission. The policy of detailed inspection was followed, and information secured at first hand regarding the situation.

The natural independence of the Greek character, and pride in Greek institutions, often masked the real need, and we discovered early that it was necessary to visit each hospital and to learn the actual conditions from personal investigation. The casual visitor was usually told by those in charge that, while there were many things they could use if they had them, they were getting along as well as the situation would permit. The true condition developed only after the establishment of mutual confidence. Some of our professional visitors, meeting well trained Greek physicians in charge of large hospitals, were at first led to believe that they had ample supplies and equipment. In one hospital we found 300 patients without proper beds or bedding, and the supply of drugs and other essentials was absolutely exhausted; and yet the pride of the officer in charge prevented him from feeling at liberty to acknowledge the real situation developed by the war. When later we sent a consignment of a few essentials, he was exceedingly grateful.

Another reason for making a personal investigation of each hospital was the criticism often heard of wholesale and indiscriminate distribution of supplies in other countries. The Greek commission decided that it would not be guilty of this error if it was possible to avoid it. Relief was administered only after a careful personal investigation by either the head of the department or some member of his staff, usually a physician, but if not, always an American trained nurse. The head of the department personally visited more than half of the hospitals to which relief was given, and many of them were visited several times.

Some well meaning friends in Washington and Paris thought that Greece had been in the war such a short time that there could be no great need for aid in Greece or in the Greek hospitals. The same argument made against aiding Greek hospitals would have applied equally well to France. These countries were not appealing to the American Red Cross as paupers and suppliants, but as our allies engaged in the greatest struggle of history and with the most desperate and unscrupulous combination of enemies ever met by the soldiers of peace-loving nations. It was just as much our duty to aid brave little Greece as brave big France. Both were prosperous, and in normal times able to meet their civic obligations. France had had many years of peace in which to develop her resources, while Greece had been almost constantly at war since 1912, and in addition had been torn asunder by internal dissensions and revolution, resulting from the disagreements between a pro-German king and a pro-Ally people. This struggle between the Venizelists and the Royalists was as much a part of the whole struggle of the Allies with Germany as was the Battle of the Marne.

The state of transportation and the difficulties arising out of the complicated control called for great patience and farsightedness in dealing with the problems. However, the assurance given to us by the officers of the national Red Cross, and the fact that the Greek government gave us free transportation of supplies from New York up to 300 tons a month, led us to believe that the first consignment of supplies ordered before leaving the United States would be in Athens on our arrival. Soon after we had made a preliminary survey of the situation, we began to send additional requisitions to Washington for the things we found absolutely necessary. The slow way in which supplies were received in Greece was no doubt due to conditions that could not be controlled, but it prevented the amelioration of much suffering and made impossible the saving of many lives.

We were assigned by the Greek government to the department of Mr. Jean Athanasaka, undersecretary of state for war, bureau of hygiene and sanitation, through whom we developed the lines of work which the American Red Cross could undertake for relief in Greece. This broad-minded and public-spirited official used every effort to forward our work.

The sudden cessation of hostilities in the Balkans was looked on by many who were not on the ground as another reason why American Red Cross assistance was no longer needed, in forgetfulness of the fact that it was impossible for the civilian, or even for the Greek government, to secure necessary supplies in the market, regardless of financial ability. Furthermore, while many citizens of Greece were rich, the government was poor. In fact, the Greek army was still intact, doing more or less active service in Russia, Asia Minor, Thrace, and Macedonia a year after the signing of the armistice; and the epidemics of influenza and of typhus kept a heavy burden on the hospitals.

CONDITIONS RESULTING FROM WAR

The war had wrought havoc with the Greek hospitals. Practically all the civilian hospitals had been converted into military hospitals. The epidemic of influenza was quite as widespread and severe in Greece as elsewhere. They had passed through epidemics of typhus in Macedonia, Epirus and the islands; and on looking back at the situation, it is easy to see why practically all of the hospitals had exhausted their reserves of equipment, stores and medicines. The richest and best equipped hospital in Greece had no adhesive plaster, gauze, roentgen tubes or cotton, not to mention many other hospital essentials, and during the six months following our arrival was not able to obtain these on the market. Many hospitals had no hypodermic syringes or needles, and no thermometers or anesthetics, and lacked many other necessary but less important items. As soon as relations of mutual confidence were established, we received almost daily, from both civilian and military hospitals, requests for the most ordinary, everyday supplies which they were unable to obtain from any other source than the American Red Cross.

There had been no adequate accumulation of stores since the Balkan wars for the day of need. The country was plunged into active participation in the world war by a blockade which made it impossible for her to import even the most essential articles. For the sake of the argument we might still admit that her wealthy citizens were financially able to supply all her needs; but however willing they may have been, to do this was impossible. The world's stock of hospital supplies was all in the hands of the Allies or the Germans. Under the circumstances, this meant that all the surplus available to allied or neutral countries was in the United States, where it was impossible for the private purchaser to buy them or to secure transportation for them. England and France had no surplus stocks to sell. The United States was supplying them. All the world's supplies were required for the Allied armies, and were under Allied control. Prior to her entrance into the war on the side of the Allies, Greece was practically shut off from the world's markets and got little or nothing; and after she entered the war she got only such portion as was necessary for keeping her army in the field and supporting her military hospitals, which was indeed a scanty allowance. There was no way in which the civil hospitals could be supplied, and at the time the American Red Cross arrived in Greece, practically all the reserve stores had been exhausted. In fact, it was this very situation which caused the Greek Red Cross, in May, 1918, to send an appeal to the American Red Cross, and which determined the national Red Cross in Washington to send a commission to Greece.

A second object in making inspections of Greek hospitals was a desire to acquaint the American public with modern Greece, the home of the father of medicine, Esculapius, and his great successor in the science of healing, Hippocrates. Greece has made a wonderful start in providing her people with hospital facilities. She is far ahead of any of her neighbors, owing to the keen intelligence and the widespread education of the Greek people; and the conditions of need we found were due to wars and epidemics, and not to a disregard and ignorance of the value of such institutions. We also hope that in view of our acquaintance for several months with this splendid little nation, the Greek people will be willing to accept a few suggestions by way of constructive criticism. I have left out of this general statement many details, but these will all be found in the reports of the commission to the national Red Cross in Washington. Accompanying these will be about 200 pictures of Greek hospitals and their personnel.

While most of the hospitals were originally intended to provide only for the poor, there is an increasing tendency to extend the service to all classes. Many of those, even in small communities, have excellent buildings, beautifully situated, often surrounded by well kept gardens, and showing a desire to make the surroundings attractive. Often the absence of the same attention to comfort and attractiveness on the interior is in sharp contrast to the surroundings. One is struck by the absence of evidence of active participation of the Greek Orthodox Church in the organization of their hospitals. There seem to be no orders of monks or sisters wholly devoted to the care of the sick. The development of hospitals has been left largely to lay initiative. On the other hand, almost every hospital has its chapel. What Greek administration has already done in building and equipping hospitals is an excellent illustration of the enlightened progress which this people has made. They have always kept in close touch with France, Germany and Italy, and the methods of organization and equipment used are largely drawn from these sources. This makes the situation more difficult for an American to understand. One sees little in Greece to show contact with England or America.

DATA COLLECTED

In making hospital inspections, we devised a brief form, in order to have the reports uniform. It was expected that these data would provide only the essential facts. This form gave the name, location, character, management, and superintendent, directress or matron; physicians, surgeons and specialists in charge; hospital records, training school, nurses employed and how trained, number of beds and whether free, paid, surgical, medical, children, obstetric, soldiers or special; the facilities offered by operating room, dressing room, laboratory, roentgen department and pharmacy; and remarks covering any other interesting and important facts.

Numerous conferences were held with members of the ministry, hospital officials, physicians and others. We always found them actively interested in developing their institutions.

One circumstance that seriously interfered with preparing detailed reports on the Greek hospitals was the rapidly changing conditions as the country passed from war to peace. Many temporary hospitals had been established. Practically all civilian hospitals had been converted into military ones, and the process of reorganization was rapid and involved constant changes in our data. For example, one hospital of about forty beds was twice taken over by the military and twice returned to its civilian management; was through two epidemics of typhus and one epidemic of influenza, and at the time of our second visit was again administered by the military authorities to provide hospital care for a second epidemic of influenza among the soldiers. While this is rather an extreme case, it illustrates one of the difficulties we encountered in estimating the value of a given hospital. It is hardly necessary to say that a civilian hospital that has passed through so many

changes of management within two or three years has little left with which to begin a normal civilian hospital life in a country so far away from the source of supply as Greece has been during and since the war.

HOSPITALS OF EASTERN MACEDONIA

This report would be incomplete without special mention of the hospitals in eastern Macedonia, which was the main scene of relief work by the American Red Cross. This district of Greece must be classed with Belgium and Serbia in the suffering that the war brought on its citizens. They not only suffered the natural privations and hardships due to being situated in the war area, but they had recently passed through two wars that had entailed great suffering. Prior to this, they had lived under Turkish rule, which gave them constant hardship from misgovernment; and during the long years in which the grasp of Turkey over her European territory was weakening, Macedonia was the scene of a fierce Bulgarian propaganda almost as devastating as war. The hatred of generations of conflict was around them. Thousands (150,000) were carried from their homes into Bulgaria, where they existed two years under a system of cruelty worse than slavery. Their cities and villages were burned and pillaged, and after the Bulgarians were driven out desolation reigned everywhere. This was the condition when we first entered eastern Macedonia at Kavala early in November, 1918. The deported population was just beginning to return. The military hospital of Kavala was a tobacco warehouse where tobacco crates took the place of beds. The sick were pouring in, but there was little or nothing we could do at that time to help them. The civil hospital had five typhus patients and no others. There was no other provision for the sick in a city which had claimed more than 40,000 inhabitants. Drama was a little better off, but not much. Her small civilian hospital had been taken over for military purposes, and when abandoned by the army was little more than a shell, without supplies or equipment, although this city of 25,000 inhabitants had not suffered to the same extent as some of her neighbors. Seres, formerly a city of 20,000, had suffered more than either Kavala or Drama, and her hospital was practically ruined, so far as service to the sick was concerned, until it was refurnished and its supplies replenished by the American Red Cross. The villages had suffered equally. The sick were on every hand, and there were no supplies or equipment for the most essential comfort.

In aiding these institutions, we encountered many serious difficulties. The long distance from Greece to America, and the great demands of other countries on American supplies, were great handicaps. The time consumed in getting supplies seemed intolerably long, and not infrequently when they arrived the quantities were altogether insufficient and many important things were missing. Much time was lost by the sudden decision to reorganize the work of the Red Cross in the Balkans and place the several commissions under a general commission for the Balkan states. Not only was time lost by this reorganization, but many supplies intended for Greece were diverted to other fields. No doubt, in some cases the conditions in other countries were more urgent; but more often the diversion of supplies was due to a misconception of the situation based on information from sources that could not have had sufficient and proper information.

CLASSIFICATION OF GREEK HOSPITALS

While the hospitals of Greece could naturally be divided into three classes, civilian, military and special, during the active progress of the war they were all military. During this stage the military hospitals were divided into permanent, temporary and civilian, taken over for military purposes. It was necessary for the government to establish purely temporary hospitals in addition to those taken over, and some of these could scarcely be called hospitals. For example, one so-called hospital was nothing more than a series of single walled tents in which more than 800 patients were lying on the ground with nothing but thin mattresses or blankets under them. These conditions were the best that could be had at the time. A number of hospitals, such as hospitals for the insane, were visited, but no attempt was made to study them in detail, as the extending of emergency relief was all that the American Red Cross could undertake.

We inspected and have reports on practically all hospitals in Greece, of which forty-seven were military (or being used for military purposes at the time) and fifty were civil, making a total of ninety-seven. Seventeen of those classified as military will return to civilian service as soon as the country is on a peace basis. These hospitals have beds for more than 20,000 patients. Practically all the military hospitals and the majority of the civilian were given substantial assistance by the Greek commission of the American Red Cross.

A word is due regarding the way in which our work has been received in Greece. As has been said elsewhere, we first met an attitude of pride in their institutions and a spirit of independence and reserve in seeking aid from the American Red Cross. We have rarely been made to feel that there was any disposition to impose on us in any way. On request they have stated their needs fairly and have accepted what we could give them in an attitude of delighted appreciation. The files of the Greek commission of the American Red Cross will show a large number of letters of appreciation from managers, physicians and boards of directors, of the most kindly and appreciative tone. Often the name of the "American Red Cross" will be found on the marble tablet containing the names of benefactors which is usually placed in the main hall of a Greek hospital.

CONCLUSION

The time for reorganization is at hand. Greece, which is a peace-loving country like America, is looking forward to a long period of peace when there will be opportunity to develop and improve her institutions, and we have had ample indication that she will then turn to her allies for suggestions and help. The previous leadership led her to provide only for the army and for the poor, with the result that in most of the hospitals the elements of comfort, cheer and social and moral improvement, which we consider so essential, are lacking. The vase of flowers, the screened window and porch, the dainty tray, the music, and many other things which come with the training, skill and human touch of the trained nurse will change these bare wards from couches of distress and suffering to homes where the sick may be surrounded by all the comforts of a home with the addition of all those touches of human sympathy which an educated and trained nurse instils. The three outstanding needs of most Greek hospitals are, modern sanitary appliances, fly screens, and proper

training schools for nurses. To meet this last need the American Red Cross will establish in Athens a training school for nurses on modern American lines. The splendid educational advancement of Greece along other lines makes her ready and, judging by many expressions made by her citizens, willing to accept new standards for her hospitals. It is in this that American influence can be of great service. Our constant visits to the hospitals and consultations with the managers, physicians, nurses and others interested have convinced us that there will be radical changes in the hospital ideas in the near future. In another chapter of this report will be found a brief detailed analysis of each hospital. In securing these data we have seen every department of almost every hospital in Greece, and we trust that the accumulation of data and the analysis of our findings may lead to a new understanding of what the hospital stands for in a community. During our inspections we uniformly made a list of the more essential needs of each institution, and in making our requisitions on Washington, Paris and the Balkan Commission for supplies, we based them on the actual conditions. Our great difficulty was to get the supplies most needed.

EMPYEMA AT THE CINCINNATI GENERAL HOSPITAL DURING THE INFLUENZA EPIDEMIC*

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As a natural result of the pandemic of influenza of 1918-1919, there has accumulated a literature sufficiently extensive to form a library of moderate size. A large proportion of published papers deal with the subject of empyema; and since for the first time in the history of the disease, hundreds of thousands of men, in the prime of life, were congregated in the close quarters of army camps and camp hospitals, it is natural that the preponderance of articles should treat of the disease and its sequelae as observed under these conditions. This fact lends justification to a presentation of this study of empyema, based on experiences during the epidemic, in the surgical services of the Cincinnati General Hospital.

An apology might seem indicated for the incompleteness of many of the records, particularly the bacteriologic; but this is accounted for by the fact that there was a dearth of physicians in civil life and that at one time seventy of the nurses were ill with the disease.

From Oct. 1, 1918, to May 1, 1919, there were admitted to the Cincinnati General Hospital 3,688 cases of influenza, of which 625, or 16.6 per cent., proved fatal. Whereas this death rate from influenza appears high, it must be remembered that only the seriously ill sought admission to the hospital wards. Among these 625 deaths, five were in cases of empyema which came under our surgical care. Altogether, fifty cases of empyema were transferred from the medical to the surgical service, or were primarily admitted to the surgical service, though the latter was not often the case. In many of the 625 cases, empyema was recognized by exploratory aspiration, but was a small factor in the death rate. As was experienced elsewhere, a very large proportion of the patients died from the toxemia incident to the pulmonary complication, before the condition of the patient or the course of the empyema warranted surgical intervention.

In many of these quickly fatal cases, pleural effusion of greater or less extent was doubtless present. It was early recognized by the medical staff that influenza toxemia with moderate pleural effusion should be treated by aspiration alone, and that early surgical interference of greater magnitude was apt to be followed by speedy death, whether as a result of the interference or despite it cannot be determined. In our surgical services, aspiration in the cyanotic stage was practiced in only two cases, but both proved fatal. It was evident that the cyanosis was not the result of pulmonary compression from pleural effusion, but was caused by the toxemia due to hemolysis. In two cases, aspiration of small quantities of turbid fluid was followed by recovery.

That later interference in cases of empyema offers a better possibility of recovery is manifest by our series of forty-six cases in which operation was performed by incision, with three deaths in the hospital and one two days after release. The average stay in the hospital before operation was $14\frac{7}{10}$ days. Some of the patients were not admitted until a day or two after the inception of the disease, and it is therefore fair to assume as an average that at least sixteen days elapsed before operation.

The average age of the patients was 21.6 years, somewhat below the average in military camps; fourteen of the patients were under draft age. It might be inferred, therefore, that the low mortality rate in our series of empyema cases might be attributable to the lower average age of our patients, in accordance with the well known fact that metapneumonic empyema is much more tractable to surgical interference in young subjects than in those of more advanced years. Curiously enough, however, there were three deaths among the fourteen patients under draft age, their ages being 15, 16 and 5 years, respectively. On the whole, the age incidence of the disease in the civil practice of our hospital did not differ materially from that which obtained in the military and camp hospitals.

It may well be claimed that the type of empyema which prevailed in the influenza epidemic among the civil population differed in severity from that observed in military hospitals. It is regrettable that our bacteriologic examinations were not complete; the streptococcus alone was found in eight cases; the pneumococcus in seven; both streptococcus and staphylococcus in nine; and both streptococcus and pneumococcus were found in six cases.

The treatment instituted in all cases of empyema was that of drainage with immediate occlusion of the pleural cavity, after the manner I have previously described.[1] Because of it, or despite it, the mortality rate was only 9 per cent.; although certainly in two, and possibly in three of our cases, there was a double empyema, necessitating bilateral drainage. In none of these three cases, however, did the disease affect the two sides at the same time; there was an interval of from two to three weeks between the operations.

The mortality rate after empyema operations is ordinarily not considered very high, and yet we find that "in 299 consecutive cases observed in so excellent an institution as the Mount Sinai Hospital, during the period of ten years, the mortality reached the formidable

* Read before the Southern Surgical Association, New Orleans, Dec. 16, 1919.

1. Ransohoff, Joseph: A Simple Method of Draining Empyema, J. A. M. A. **66**: 1196 (April 15) 1916