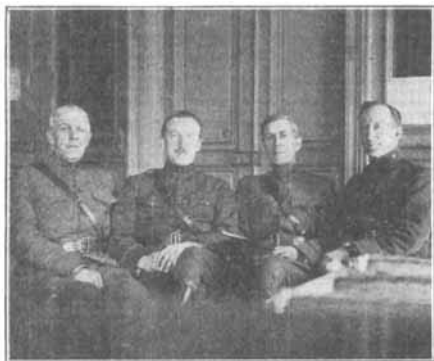


THE AMERICAN RED CROSS PHARMACY IN PARIS.*

BY GEORGE LAWRENCE BURROUGHS.

General Nature of Work Conducted.—The Section of Hospital Supplies has charge of the receipt, storage and issuance of all technical, medical and surgical supplies. This includes drugs, surgical and dental instruments, X-ray apparatus, anesthetics, biological products, hospital accessories and a laboratory for the manufacture of pharmaceuticals.

Location of Section.—The Section is a headquarters activity, operating as a sub-division of the Department of Requirements, reporting to the Director of the Department, and receiving its requisitions for supplies from the Medical and Surgical Department. All the warehouses of the Section are located in or near Paris, shipments of supplies being made direct to A. E. F. activities or to Zone warehouses in which there is located a pharmacist to oversee the local distribution of the supplies.



Staff of A. R. C. Pharmacy. Left to right: Major Geo. L. Burroughs, Captain Frank E. Norton, Captain Allen R. Bishop, Captain Charles G. Shedd.



Laboratory of A. R. C. Pharmacy, 12 rue de Tilsitt, Paris, France.

The number of the personnel employed in the Section has averaged forty-one, the lowest number employed being twenty-three and the highest fifty-nine. This average does not include the time between January 10 and June 17, 1917, when only the Pharmacy was operating. During that period there was an average of fourteen personnel who worked fifteen hours daily, Sundays and holidays included, in their efforts that orders for supplies should be promptly filled.

Growth of Section.—In the fall of 1917 the Medical and Surgical Department, realizing the immense importance to the A. E. F., the handling of medical supplies was destined to become, decided that the supplies should be segregated and under the charge of an experienced pharmacist with executive ability, who understood the work to be performed and the necessary care to be used in the handling of such articles as would in the hands of untrained persons be liable to produce injury.

The hotel at 10-12 rue de Tilsitt was leased, as the rooms were admirably suited for the storing of drugs and surgical instruments, owing to the possibility of keeping an even temperature throughout the building. These rooms were

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fitted with a shelving arrangement to hold an enormous stock of supplies and yet have each item so accessible that it could be obtained without any loss of time; the entire arrangement reflected that these supplies are primarily intended for the quick emergency work arising through the sudden shifting of Army units. That this arrangement was properly conceived is proven by the records of the Section in having filled fifty-six requisitions in one day, and during the past ten months it has been the proud boast of the Section that each night has seen the day's requisitions filled.

Warehouses of the Section.—The headquarters of the Section is located at 10 rue de Tilsitt and is generally known as the A. R. C. Pharmacy. The building, formerly an apartment hotel, was leased in January, 1918, and commenced its activities the first week by issuing supplies through the French Hospital Supply Service at 20 rue Troyon. This arrangement with rue Troyon was continued during the first five months, for all rail shipments, but ninety percent of the deliveries were made direct from the Pharmacy through camion service.

The basement of the building is used for receiving, packing and shipping; probably seventy-five percent of all supplies issued by the Section has passed through these rooms.

On the first floor are located the general offices of the Section and in the various rooms the drugs and antiseptics are stored.

The rooms of the second floor contain the dental supplies, surgical instruments, rubber goods, sutures, serums and laboratory equipment.

With a well organized force, each department is in charge of a man fitted by previous training for the handling of supplies under his care; pharmacists for the laboratory and drug department; a dental and surgical instrument man of over twenty years' experience in this line of work, supervising the instrument department; the hospital accessories and X-ray apparatus in charge of an experienced hospital superintendent, and the shipping looked after by a man to whose competency is due, in no small measure, the prompt issuance of supplies.

The rooms, nineteen in all, are numbered, the sections lettered, and the compartments in each section again numbered, making it possible even by the dim light permitted during the night air raids to locate the items wanted.

A well equipped laboratory was established at 12 rue de Tilsitt for the manufacture of pharmaceuticals, the packing of them in convenient sizes, and of drugs purchased in bulk. This laboratory has been a valuable adjunct to the Pharmacy and has paid for its equipment several times over. The laboratory was not only the means of a large financial saving, but it enabled the delivery within a few hours of many preparations which otherwise would be delayed from two to six weeks, if obtained from local houses.

In this laboratory all the tablets supplied during the first three months were made, and such preparations of the U. S. P. and N. F., with which American doctors are more familiar and which differ in their composition from those of the Codex, are still being compounded.

By June the operations of the Pharmacy had reached a stage of such importance that the Section of Hospital Supplies was created. The warehouses at

25 rue de Villejust and 17 rue Pierre Charron were added to the Pharmacy and all supplies pertaining to the Section were transferred to these three warehouses. Previous to this the supplies had been scattered in various warehouses of the Section of Stores, making it practically impossible to know the amount of reserve stock on hand, as the Pharmacy had no information on stock outside its own warehouse.

In August the distribution of all alcohol and ether was assumed by the Section, and the Bureau of Manufacture commenced to issue its tanks of nitrous oxide and oxygen through the service of Hospital Supplies. This large addition of stock necessitated more space. The powder magazine of Fort D'Ivry and the riding academy at 12 rue Duphot were therefore loaned to the Section through the courtesy of the French authorities, both properties being free of rental charges. The three warehouses—Fort D'Ivry, 17 rue Pierre Charron and 12 rue Duphot—are used entirely for reserve stock. All the receiving, assembling and shipping are carried on at 10 rue de Tilsitt and 25 rue de Villejust.

Material Furnished.—To give an itemized account of material furnished would involve so many varieties of articles that it would be tiresome in the extreme. An idea may be gained of the work by the following amounts issued during the past six months—July 1, 1918, to January 1, 1919; in this are consolidated all the supplies under a few brief headings:

Drugs.....	75,016 lbs.	Rubber Gloves.....	15,108 prs.
Tablets.....	3,954,178	Dental Supplies.....	4,517 articles
Serums.....	21,566 vials	Sutures.....	73,404 tubes
Laboratory Reagents.....	1,252 lbs.	Goggles.....	2,158
Laboratory Equipment.....	21,766 articles	Rubber Tubing.....	111,463 feet
Microscopic Stains.....	4,520 grammes	Rubber Sheeting.....	38,517 feet
Surgical Instruments.....	69,477	Adhesive Plaster.....	22,059 feet
Surgical Units.....	271	Hospital Accessories.....	68,697 articles
Syringes.....	14,044	Oil Silk.....	4,920 feet
Surgical Needles.....	30,690	Bottles.....	9,996

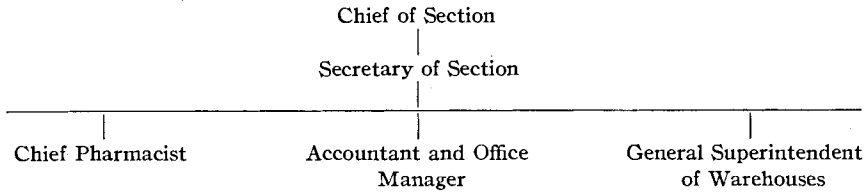
and also the hundreds of tanks of nitrous oxide and oxygen, the records of which are in the Bureau of Manufactures.

An idea of the growth of the Section may be obtained by the increase in the variety of articles carried in stock as shown in the following table taken from the inventory of May 1, 1918, and that of January 1, 1919:

	Number of kinds in stock May 1, 1918.	Number of kinds in stock January 1, 1919.
Drugs.....	277	648
Surgical Instruments.....	252	396
Dental Supplies.....	27	204
Laboratory Equipment.....	51	209
Hospital Accessories.....	0	142
Oxygen and Nitrous Oxide Tanks.....	0	21
	607	1620

The value of the stock fluctuates rapidly, owing to the variations between receipts and shipments, but the average value of the entire stock for insurance has been 9,000,000 francs.

ORGANIZATION;



The Secretary has charge of all correspondence of the Section, supervises the making out of assembly orders and distribution sheets, requisitions for supplies and orders for transfer of material between the warehouses.

The Chief Pharmacist is responsible for the filling of all assembly orders. All technical employees are subject to his authority and in the absence of the Chief of the Section he takes charge of the headquarters.

The General Superintendent of Warehouses takes care of the receiving, shipping and storage of supplies subject to the advice of the Chief Pharmacist. He has charge of the movement of supplies outside the Section, and of the camion service for the Section.

The Accountant, working with the advice of the Comptroller at General Headquarters, is responsible for all funds of the Section. He has charge of the pricing of inventories and invoices of supplies to consignees. The management of the offices and all the personnel of the Section are in his care, subject to the approval of the Chief.

Necessity for the Section.—The necessity for the Section is quite obvious. The handling of drugs and many surgical instruments is strictly regulated by law during peace. If the public health service of civilized nations has found it a necessary precaution in times of peace, these regulations should be even more rigidly enforced during a condition of war.

The importance of medical and surgical supply service can hardly be exaggerated, and the purchase, manufacture and distribution of these supplies should be in charge of a technically trained and experienced person in order that the highest degree of efficiency in the work be given.

The pharmacist being technically trained and also a business man of no small ability is best qualified to have charge of hospital supplies. He is acquainted with the conditions necessary for the proper storing of perishable stock, the varied amounts of stock necessary to carry according to the probable demand, what supplies require conserving and whether other articles could safely be used to replace those temporarily out of the market.

It is quite simple to estimate the number of shoes, hats, food supply, etc. for one thousand or ten thousand men, but it is much more complex to estimate the quantities of the thousand varieties of medical supplies, varying as they do with the kinds of cases treated in each hospital, the illnesses prevalent in the zone and even with the weather conditions.

The drugs must be properly labeled, their quality and nature verified. There must be maintained a checking system that will prevent error of sending the wrong package. In the A. R. C. Pharmacy each item is checked three times to prevent the human element of mistakes which are always liable to occur, and on several occasions this proved a most fortunate system. During all the rush work

of filling orders for waiting messengers we have yet to find a single case of sending out the wrong supplies. Several cases of goods have been received and were found to be mislabeled or to contain mixed supplies, such as vials of veterinary anti-tetanic serum with vials of mixed typhoid; asafetida pills labeled "quinine" and even Linimentum Saponis labeled "Potassium Iodide." These errors were probably due to the shortage of experienced assistants in the manufacturing houses, due in turn to so many pharmacists being engaged in war work.

Without a Section of Hospital Supplies, considerable wastage of material might be occasioned by improper storage and also by unfamiliarity with the various names of the supplies. Many articles might be reported not in stock and purchase orders made when there would be a sufficient supply on hand under other names than the ones called for on requisitions. All such errors are practically impossible with this Section, as each requisition is passed on by a person familiar with all the synonyms of the articles in his department, and whose duty it is to know what there is on hand that could be used in place of the desired articles, and if it would be acceptable to the consignee, before a purchase order is made out. This applies not only to drugs but to many surgical instruments and accessories.

Emergency Service.—The personnel of the Section of Hospital Supplies is in the position of the stoker on a battleship; while the battle rages above he neither hears nor sees it, but he knows that on his efforts depend the manoeuvring of the ship and the success of the battle. So with the Section of Hospital Supplies; the men have not the added stimulant of the field workers in being in the forefront and seeing the actual results of their labor. These men never see the moving troops nor hear the roar of cannon, but with a true patriotic devotion they work unceasingly night and day in order that the pain of wounds may be relieved and the wounds cared for. Food and clothing may be and often are delayed for days, but anesthetics, antiseptics, and all medical supplies must be delivered immediately or lives will be lost that might have been saved. For this reason the Section of Hospital Supplies knows no difference between night and day. Week-day, Sunday and holiday are all the same to them in their efforts to get the supplies quickly to the medical corps and enable the surgeon to save the lives of wounded men. To their efforts many hundreds of men owe their lives, but it will be for the field worker to tell of the numerous times in which the antiseptics, the sutures and surgical instruments arrived at the place where needed, and the many times when, the regular source of supply being cut off, the A. R. C. Pharmacy stepped promptly into the breach and filled the emergency call. The reputation of the Pharmacy for dependability was early established, and was maintained throughout the entire period of active warfare, and how well it met the many calls upon it during the retirement of our armies in March, May and June, and again in the advance of July, will be testified to by the Medical and Surgical Department, through which the requisitions are received and by which their distribution is directed.

During the trying days of the three enemy offensives, the effectiveness of the arrangement for emergency work was thoroughly tested and was equal to every demand put upon it. Though greatly handicapped by the small number of its force, which at this period was only fourteen, without thought of sleep a force of four worked continuously for periods of thirty to forty hours assembling, pack-

ing and loading the cases into the ambulances, camions and staff cars—on one occasion the car of the Commissioner for France was used in the early morning hours to hurry the much needed supplies to the battle line.

Requisitions.—A large percentage of requisitions has been rush orders received by telephone and delivered to the camions calling for the supplies a few hours later. Shipments by rail were made as quickly as the transport orders could be arranged. In the following table it is the orders for shipments by rail received during the last few days of the month which appear as undelivered during the month received, making the deliveries in August, November and December exceed the requisitions received:

Month, 1918.	Requisitions received.	Requisitions delivered.
January and February.....	42	42
March.....	79	79
April.....	133	133
May.....	137	137
June.....	336	336
July.....	486	464
August.....	494	506
September.....	529	523
October.....	682	605
November.....	409	419
December.....	384	417

The following table shows the days on which the greatest number of requisitions were received:

June 13, 14, 15..... total	57	September 27.....	42
July 13.....	28	October 3.....	46
July 16.....	22	October 4.....	41
July 17.....	25	October 12.....	53
July 18.....	28	October 25.....	56
July 20.....	34	October 29.....	43
August 1.....	39	November 4.....	38

Every order received on these days was either shipped the same day or was ready packed, awaiting transportation.

The units served may be illustrated by the distribution of requisitions for October, November and December:

	October.	November.	December.
U. S. Army and Navy.....	62	72	39
A. R. C. Hospitals and Dispensaries.....	345	242	175
A. R. C. Warehouses.....	79	13	15
French Hospital Supply Service.....	163	0	6
French Hospitals.....	8	61	48
British Hospitals.....	3	6	1
Belgian Commission.....	7	3	1
Polish Army.....	1	3	2
Rome Commission.....	1	0	0
Switzerland Commission.....	1	0	0
Miscellaneous Units in France.....	12	9	4
Balkan Commission.....	0	0	69
Montenegro Commission.....	0	0	8
Tchecho Slovaque Commission.....	0	0	3
Palestine Commission.....	0	0	1
Greek Commission.....	0	0	2
Col. House—Peace Commission.....	0	0	12

An example of how quickly orders are filled may be given from a recent experience, when at five o'clock in the afternoon a rush order was telephoned to make up six camionette units of emergency supplies for relief work on the returning ex-prisoners who were in desperate need of medical attention. This entire order, making approximately half a ton of assorted supplies to each load, was assembled, packed, each unit numbered, and a list of the contents made of each case, ready and awaiting the camionettes at half past six o'clock.

One of the great aids in filling emergency orders has been the so-called "Burlingame Unit," which was made up by the Pharmacy force. It consisted of all the surgical instruments, sutures, antiseptics and drugs necessary for a surgeon's use in treating five hundred cases. This unit has been carried on hand at the Pharmacy, ready packed for immediate delivery.

Instances such as the above could have been enumerated many times, as the Section of Hospital Supplies has at all times given of its best efforts to coöperate with the Medical and Surgical Section in making the American Red Cross Service all that the American people demanded.

Despite the arduous duties of their own section, when in March the call came for assistance in caring for refugees, the men of this Section volunteered for night work in this relief and several of them served at the railroad station until midnight during that week. Again in July, when wounded men were arriving in Paris in large numbers, our personnel assisted in the receiving and undressing of these patients at the hospital.

To work in the Section of Hospital Supplies has been a privilege greatly appreciated and an honor highly prized by all the personnel, in whom there is established a feeling of pride amply justified by the record of their achievement in maintaining the honor and reputation of the American Red Cross in its greatest humanitarian work—saving the lives of sick and wounded.

The Section is still one of the most active in the organization and daily the loaded camions leave its office with the medical supplies for all parts of Europe.

EBERT-HALLBERG-OLDBERG.*

BY HENRY M. WHELPLEY.

The Ebert-Hallberg-Oldberg pharmacy period of Chicago, Illinois, the Middle West and in a way of the entire country, stands out with increasing prominence as time passes and we gain the advantage of perspective.

Each one of these three men was sufficiently strong in character, active in work and efficient in accomplishments to place a city even of the size of Chicago on the pharmaceutical map and keep it there during decades of subsequent history. The co-existence of the three is a remarkable circumstance. It was not, however, mutual affinity that brought them together. It is with some hesitation that I hyphenate the three names for this sketch. They are euphonius enough as I say, "Ebert-Hallberg-Oldberg," and I hope the echo will not disturb their peaceful and well-earned "rest beyond."

* An address, illustrated with lantern slides, before the Section on Historical Interests, A. Ph. A., Chicago meeting, 1918.