SAVING WOUNDED SOLDIERS TO FACE BATTLE LINE AGAIN

Dr. Roux, Head of the Pasteur Institute, Says That War Has Shown Preparation for This Work to Be a Most Vital Detail in Making Ready for National Defence

By EDWARD MARSHALL.

THE name Pasteur means much in every portion of the world, and at all times now in Paris, and, indeed, in all of France, it has a significance especially deep and momentous, for the Pasteur Institute (in normal times principally a place of scientific research more or less abstract) has been transformed into the head source of that scientific magic which is doing all that can be done to mitigate for the French people the horrors of this war.

The great Pasteur is dead, but in his place reigns Dr. Pierre Paul Emile Roux, whose researches and labors in the pathological and other fields long ago made him one of the world's greatest scientists.

With him I had the other day the privilege of as much time as I wished. It was the renewal of an old, and to me wonderful, acquaintance, for it was my privilege, many years ago, to have him show me, here in Paris, the earliest demonstrations of the application of the anti-diphtheritic serum, giving me the honor of being, I think, the first to write of it for the English speaking lay world.

The scientist's time, in these days, is entirely absorbed by the problems of the war.

It is said that in the American civil war modern surgery was born, and I asked Prof. Roux if he thinks this vast conflict likely to make to the world of science a contribution of anything like equal value.

"I think not," said he. "It will not have even that indirectly beneficent effect. This war is wholly bad, save in the fact that the fortitude and determination of the Allies again are proving that humanity will not calmly tolerate oppression, brutality and selfishness.

"Most, if not all, of the scientific work being done for the salvation of the great conflict's victims was developed in peace time. Modern science does not need the stimulus of war to make it active and aspiring. In other words, while science is doing infinitely great things to mitigate the horrors of the war, the war shows not the slightest promise, so far, of contributing anything whatever to any science save that of destruction, while it already has cost science much by destroying the lives of a tragically large number of her most ardent and able young devotees in France, England, Italy, and, of course, in Germany and Austria."

A few days earlier in London I had heard a somewhat similar expression concerning the scientific tragedy of the great conflict from the lips of the great Briton who made humanity his debtor by discovering the important part played by mosquitoes in the transmission of the malarial germ. Now it was confirmed by the equally great Frenchman. These two foes of war, working madly as they both are to repair its ravages and occupied by such work to the exclusion of all creative work, are one in their expressions of deep horror at the disaster which has fallen on humanity.

"Serums are playing their important part in the war," Prof. Roux continued, "and here at the Pasteur Institute, where of course all original research has stopped (as the war has stopped most of humanity's most useful constructive efforts for the time, while it retrogrades into working for destruction), we are occupied principally in the preparation of such substances. The demand coming from the front is not less than stupendous and is terribly insistent.

"In the beginning of the war there were a considerable number of cases of tetanus, an infection to which men wounded in localities which long have been inhabited are especially exposed, as the tetanus germ develops in the earth, or at least lurks there. Injections of the anti-tetanus serum have been prompt and thus a really very great number of lives have been preserved. In this one way alone an important saving of humanity has been effected. We have manufactured also very large quantities of almost all the other serums which are required in ordinary times, for there are few ills to which flesh is heir which are not multiplied in war time.

"For example, since the war began there has been a large call for anti-diphtheritic serum for use among both the military and civil populations of the war area, who, of necessity deserted by many of their best medical men and subjected to unusual hardships while the war lasts, must endure an average of suffering very much higher than usual. In the cities of Europe almost without exception scientific sanitary precautions cannot but be relaxed during this period of great stress while men fly at one another's throats. That adds to the vast crime of those who thrust this war upon humanity.

"From an army in the field, too, there is continually a large call for anti-meningitis serum. This cerebro-spinal infection has been kept well in hand because of the facilities which we have developed here for the production of the serum. Thus the war has caused an extremely important extension of the therapeutical service of the Pasteur Institute, although, of course, it has very largely stopped all investigative and other research work. War, being retrogressive, puts an end to progress while it lasts.

"The struggle of science to prevent the spread of infectious disease in the French army has been unremitting and intense. What we are doing for the French army is being done also for the other fighting forces, so that the most important part of all Europe's scientific energy at present is absorbed by the abnormal needs due to the war. This effort to prevent the spread of infectious disease among our men in the field has necessitated installation of a great many bacteriological laboratories with each large body of troops, and all material for these laboratories is supplied by the Pasteur Institute.

"In addition to these army field laboratories, numbering ninety or more in all, many similar installations have been necessitated in the interior of France far from the war zone, so that at present a great number of my colleagues are kept busy preparing the material with which to keep all these laboratories supplied."

"What has been the chief difficulty which has hampered your work in this war?" I asked.

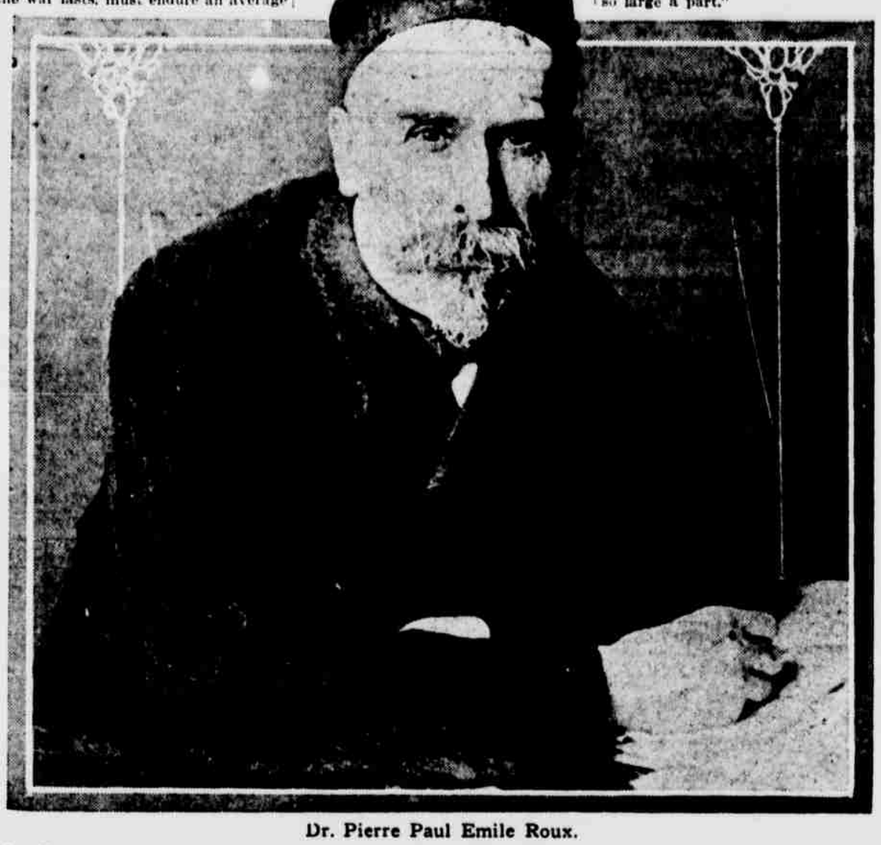
"It came about when the Germans were approaching Paris and when, as a precaution, we transported the greater part of our material to Toulouse. Here in Paris we kept only what was necessary for use in the intrenched camp into which the city was transformed. But happily Germany's strength waned and ours increased. We need not have taken the precaution.

"As it is, we have been very busy and we have been useful, I think. Besides the vaccines which I have referred to we have created and supplied immense quantities of anti-typhoid vaccine for general use and anti-cholera serum for use in Salonica, Gallipoli and Serbia.

"This war has tried out for the first time some terrible engines of destruction, such as the Zeppelin and the aeroplane, the submarine, the enormous new guns, modern asphyxiating gases, modern incendiary bombs and all the other awful ingenuities of death which man's developed science has produced, but also it has proved the competence of man along worthier lines.

"The sanitary situation in the army, from the point of view of infectious disease, has been most satisfactory. Science has accomplished much to save, even as it has accomplished much to destroy life. There has not been an epidemic among the northern armies. The Pasteur Institute has played its part in the whole great drama, for it has furnished far more than any other agency of the serums which have prevented infectious disease.

"In every previous great war the number of fighting men incapacitated by infectious disease was enormous; in this war it will be found, when the end comes, to have been extraordinarily small. This is principally due to the application of modern prophylactic methods, in which serums play so large a part."



Dr. Pierre Paul Emile Roux.

"The number of infected wounds, I have been told by the British Surgeon-General, is very large," I suggested.

"Enormous. But of such wounds the care has been so good that the number of resultant deaths has been comparatively small. This war has taught us that nearly every wound inflicted by a projectile from firearms will be infected, and consequently nearly every injury in this war must be treated as a dirty wound. This means that surgeons of ability must be stationed as close as possible to the places where wounds are likely to be inflicted. This has made necessary laboratory service near the firing line as well as in the hospitals in the interior. Such facilities never have been known before in warfare or so seriously needed."

"How is this laboratory service organized?"

"All armies have laboratory services in these days. The laboratories not only enable correct diagnosis of infectious disease, but also analyze drinking water, foodstuffs, &c., so that the soldier is safeguarded not only after but before he is wounded. Besides the bacteriological laboratories which are a part of the equipment of each army there is a laboratory in each contagious disease hospital, and there are especial laboratories in each military 'region' of the interior country, the business of which it is to watch over the troops in depots and the classes of young men undergoing their preliminary training.

"Both the laboratories of the armies and those of the military regions in the interior have minor institutions dependent upon them, and some of these are mobile, being equipped with especially fitted automobiles, so that whenever, for instance, an examination of water is necessary the laboratory and its material can be transported quickly to the spot where they are needed. Motors have had an immense effect upon the details of warfare, and on no other detail has their effect been greater than upon the operations of the sanitary corps.

"The extension of this laboratory work has been astonishing. Besides the field laboratories there are bodies of sanitary brancardiers de corps who go on the very battlefields; stretcher bearers who pick up the wounded. These men are very much exposed, as are also the doctors who direct them, and in not a few instances such soldiers of science have been killed. Laboratory assistants frequently go to examine water in places where they are actually under fire.

"The laboratory work in military field operations has gained an importance comparable with that of the doctors and surgeons themselves. It prevents disease by insisting on precautions after having ferreted out perils; it protects wounds from infection, watches the effect of antiseptics and carefully makes notes of all reparative work. The laboratory is responsible for what amounts to a general defeat during this war of that whole group of disorders which were the soldiers' worst enemies in the old days, being known under the general heading of 'camp diseases.'

"Dysenlery, for example, which has been a dreadful cause of mortality in previous wars, has been far less important in this great struggle, although the conditions of trench warfare are such as to favor especially its spread and virulence, other things being equal."

I was delighted now to hear Dr. Roux devote five minutes to unqualified praise not only of the generosity and devotion which make possible and characteristic the work of the American Hospital in Paris, but of its scientific achievements. Already in one of these articles I have told something of the bravery of its young American ambulance drivers and stretcher bearers and in another have hinted at the marvels of reconstructive facial surgery which are performed by the devoted experts who have crossed the seas from our own United States to help France, our sister republic and old time benefactor, in the day of her distress.

I have explained as fully as is considerate to a mixed newspaper reading public the horrors of the faceless men who sometimes are brought in from the far front in the white and splendid cars of the American train and how through Yankee skill marvels are performed which send them to the world almost restored to normal in appearance. Almost everything but seeing eyes have been supplied to wounded Frenchmen at this wonderful American Hospital (which, I feel constrained to say, needs funds from YOU who read this) and its work has become an international influence toward friendship for America the effect of which it would be hard to overestimate. The tribute of this Frenchman, world leader in the realm of bacteriological science, touched and delighted me.

I asked him to suggest details of other work in which help might be given by such Americans as are disposed further to remember the debt we owe to Lafayette and France.

"Our hospitals are well organized and equipped at present," he replied. "But assistance is of the utmost moment in the reeducation of the mutilated to the point where they may meet their handicaps in future life and still be measurably self-supporting and happy. Workshops must be provided and apparatus must be supplied fitted to all these extraordinary needs of the armless, legless, eyeless. This incredibly awful war has spread individual problems of this kind all over Europe.

"Societies already have been organized and Government committees have been formed for the especial consideration of the problem. But the number of wounded who have been incapacitated for the work which they did in pre-war days is startling, and kindly human hearts could not more worthily direct their efforts or employ their funds than in the work of helping them. Under the Ministry of the Interior, at St. Maurice an institution has been established which is doing the most wonderful work, proving that few things are impossible in the way of adapting handicapped men to bear their burdens lightly, avoiding permanent dependence upon others. And at Lyons the wonderful Mayor" (I have heard about this man, M. Herriot, from all sides, in England as well as in France) "has installed workshop training schools which are accomplishing much. But the number of mutilated is beyond computation, the number blinded by the barbarous fighting methods of the Germans is incredible.

"Fortunately, we have found means whereby we have overcome most of the tragic effects of these incredible horrors. In the early days of the war asphyxiating gases, which ate men's lungs away, and tear shells, which destroyed their eyes, offered difficult problems. Now we have our men equipped with masks which enable them to remain for considerable periods surrounded by these chemical terrors without harm."

I asked Dr. Roux to comment on the especial disadvantages to the modern fighting man of life for long periods in trenches.

"Invasions of parasites have been among the most serious perils of this sort of warfare, he declared. "Science has devoted much thought to its endeavors to shield the soldier from vermin of all sorts. Much has been accomplished by insistence upon cleanliness and the use of various oils. Several diseases are directly transmitted by vermin, notable among them being exanthematique typhus and recurrent typhus. In Serbia the destruction of vermin among civil and military populations was followed immediately by the disappearance of these disorders.

"This discovery is of an importance secondary only to that of the discovery that malaria and yellow fever are transmitted through the medium of the mosquito. In late years the role of various stinging insects has been found to be very important in pathology. In France there is very little intermittent fever and the mosquito does not play an important part, but in Salonica and the Valley of the Vardar we were forced very elaborately to defend our troops against such insects."

I asked this great French scientist if he had any suggestions, born of his experience in this war, to make to the medical department of our own American fighting forces.

"The preservation of the health of an army," said he, "has become a highly scientized matter calling for all the resources of the most advanced bacteriological and epidemiological experts. If epidemics are to be avoided they must be quickly discovered and their sources determined, which means continuous and minute scientific watchfulness. It is this necessity which makes laboratory service so important to an army.

"In a modern war science must be mobilized as fighting men are mobilized. The surgical service must be organized in time of peace, even to the arrangement of units to accompany each army and army corps and to the designation of individual surgeons to be attached to each individual ambulance. And also in time of peace all the necessary medical and surgical material for a long war should be accumulated.

"To-day motor cars play an immensely important part in ambulance service and they should be provided in great numbers in advance. In addition to cars for purely transportation purposes, auto hospitals provided with every possible equipment, including operating rooms, should be ready to go into service at a moment's notice. Such equipment is essential if long transportation of the wounded before the administration of treatment is to be avoided.

"In addition to the surgical service medical and prophylactic service must be organized. The prophylactic service must be carried out by army doctors, assisted by army laboratories, and the medical service must be ready to install in the zone of the armies hospitals for contagious disease. Thus will be avoided the necessity for transporting sufferers from contagious disease through long stretches of country previously uninfected, a most dangerous procedure.

"This war has been one of immobility, of fixed positions. Other wars will be like it. America should consider this. No country can be sure of freedom from aggression, although this is a melancholy fact. Medical preparation is among the most important features of preparedness.

"It should be complete, even to arrangements in the interior of the country, far from the probable fighting zone, for central laboratories, equipped to prepare and renew all the supplies and material necessary for the laboratories at the front."

WAR TIME ENVELOPES OF 1864 WERE FORERUNNERS OF TO-DAY'S CARTOONS

AS an expression of patriotism, the pictorial stationery of the time of the civil war is in curious contrast with the cartoons of the present time depicting aspects of the European war and the Mexican situation. Envelopes especially were used to express the sentiments called forth by the crisis. Not only individuals but cities, States and political parties had their own designs, and not infrequently the letterheads as well as the envelopes were decorated with pictures and mottoes of a patriotic character.

Most of this stationery has disappeared, but it happens that just at this psychological moment there has come to light a rare and interesting collection comprising some 1,000 specimens. The collection, which was the property of a Federal army officer, was brought to light the other day by his daughter, who was rummaging through some war relics seeking for a flag to carry in a preparedness parade. To the veteran of the civil war the old envelopes cannot fail to bring back vivid memories of the great conflict.

The illustrations printed on these faded bits of paper are many and diverse. It is interesting to note, however, that through the entire collection one sentiment, that of unbounded patriotism, runs like the warp and woof of a textile pattern.

While it is said the idea of this patriotic stationery originated in the North, it was adopted by both sides, in many instances the coats of arms of the various States formed the chief decoration. On other envelopes there were gayly colored devices to which were appended mottoes expressive of some sentiment or conviction regarding some phase of the war. Enthusiasm over the fad ran so high that, it is said, more than 4,000 different kinds of envelopes were issued in three weeks.

Among the devices most popular in the North were those exhibiting Liberty, the American eagle and Old Glory. Portraits of leaders and popular heroes appeared in large numbers. The likeness of Gen. Winfield Scott frequently adorned envelopes. His picture flanked by the Stars and Stripes or else showing him in the act of crushing the secessionists became a favorite subject with the artists.

Jefferson Davis naturally figured extensively on the envelopes published in the South, and his portrait, draped with the Stars and Bars, or accompanied with crossed cannon and a stand of Southern flags, was often seen. On the Northern envelopes also he came in for his share of notoriety, one humorous illustration was entitled "Jeff and the Showman." In this case Davis was seen peering into a stereopticon or dissolving view apparatus. The showman who is manipulating the machine is made to say: "At the end of the avenue you perceive a white house. Keep your eye upon it and it will dissolve and fade from view."

In many cases the feeling prevailing in the North against Davis was expressed by such means as a skull and crossbones or a death's head on a black field with the words "J. D. His Marque" below. South Carolina's device, the palmetto flag, was frequently used on the Southern envelopes accompanied by some such motto as "We will defend it with our lives and fortunes" or the more belligerent "Don't tread on us."

Ellsworth, the first to fall in the defence of the Union, was very popular, and the slogan "Remember Ellsworth," which went with one design, served to inspire as great patriotic enthusiasm then as did "Remember the Maine" during the Spanish-American war. The scene of his death was frequently depicted and his likeness, surrounded with patriotic emblems and with his own words, "He who noted even the fall of a sparrow will have some purpose even in the fate of one like me," aroused tremendous patriotic fervor.

The loyalty of the women, both North and South, was a favorite subject with the artists. One envelope shows a woman fashioning garments for the soldiers, with the words, "If I can't go I can help those who do." Another envelope in which the feminine element figured shows the lean form of a woman sewing by a table at night. Below the picture are the words "Our hearts are with them."

Sometimes the whole address side of the envelope was gayly decorated, one such picturing the attack on Sumter in red, white and blue. During the war there was a great demand for envelopes which would insure safe delivery of letters at the front. For this purpose an envelope was made up with the regiment, company and captain, Colonel commanding and Col. designated by printed abbreviations, blank spaces being left to be filled in by the addressee. This greatly lessened the danger of letters going astray and was undoubtedly a great boon to soldiers and their friends and families. Invariably there was a bright patriotic motto, such as "Success to Our Volunteers," accompanied it.

Maryland's favorite design showed the State seal flanked by the Stars and Stripes surmounting a scroll below the words, "Under the shadow of this flag Maryland shall prosper." The style in which the Stars and Stripes are being nailed to a flagpole by a loyal patriot bears a motto that strikes a responsive chord in the breast of every loyal American reader: "Wherever shall it wave, our Nation's emblem, bidding defiance to Rebels and Traitors."

And so it goes through the entire 1,000 different illustrations. While the designs are varied the sentiment is the same. These war time envelopes are interesting, for from them it is possible to glean things that may appeal to historians, or may be deemed of too trifling importance to be chronicled.

Envelopes popular in civil war days.

CITY'S NEW NIGHT LIFE PUZZLES THE NATIVE AND HE BLAMES IT ON THE WAR

THERE is a new night life in New York, due to the war in Europe. The actors and the artists and munition agents, the slackers and the rich old rounders are here in droves; New York is their Mecca, and here they tarry, subtly introducing a bit of the other side into all our nocturnal revels. The average native does not notice it at once. He goes into a cafe or up on a roof garden some hot night, and something in the exotic atmosphere stirs his consciousness.

"What's getting into things?" he demands with a snort. He does not feel at home. It isn't the prices; you can't startle a real New Yorker by charging him. Our wave of prosperity—and here again you may blame the war in Europe—has dropped the hotel man into the lap of possibility, and he is taking full advantage of the situation. What money is going into his pockets and out of ours! And with what wild, artificial joy we give it!

There's the rub. That is the atmosphere the native New Yorker scents in his haunts of diversion and wonders "What the devil?" The change has been so gradual, he cannot be sure there is a change. But the New Yorker who has been away six months and comes back, or the poor unfortunate who lives in some other part of the country and can only come here a few weeks or months in the year, which he has been doing for five years or more, spots the difference in his first night along the Great White Way.

"Who in thunder are these people?" asks the returned native.

"Oh, I don't know," says the average New Yorker. "Some visitors, I suppose."

"But this—this is the limit! Say, I'd think I was in Budapest! Can't they fall off into the ocean and give us our city for ourselves?"

Oh, they'll do that after the war is over. Just at present, it's the safest and the pleasantest place most of them know. They're a shallower crowd than we have known, bent on being entertained. They bring out the noise in us; the buffoonery, they would say. There is a falseness, an insincerity, an empty glamour round the wine tables. Why? Because your European here is not a happy person, and for various reasons. Most of them would live more luxuriously at home, and for less money; a few of them are over on dangerous missions; the workers are having trouble of their own eking out an existence, and the slackers have much ado to still their conscience.

This slacker is of all ages and conditions. Give the devil his due and say he is not often a German. Or, if he is, we think him a spy or an emissary sent over here to blow up one of our munition factories, and we frown. His wit is heavy. He does not count largely in the new night life.

The ties and the gestures of the Frenchman and the Italian and the Slav, the fierce mustaches and beetling eyebrows of the Russian fascinate us and count much. And their women! Your American woman on Broadway and Fifth avenue is a work of art; we admit that. But she never knew or learned the wholesale cleaning up of the paint and the powder boxes as have these Europeans! The chorus girl has no chance. Beside the brilliant, restless, glinting black eyes fringed in hillocks of grease paint, the carmine lips and carmine cheeks, the shoulders and backs of cream, the poor American looks like a little country girl rising at 5 A. M. to water the stock.

The French slacker gesticulates, and the British slacker glowers above his whiskey and soda. Heavens, he is bored! And an Englishman bored is a creature indescribable. He has scruples against war and against conscription; it's a bally mess on the other side, by Jove! and he wishes to God it were well over. The prices on this side! "Wobbers, confound them!"

We are. Let us get the slacker while the getting's good. But he may be only a slaving munition agent whose expenses the British Government is paying, or a banker come to negotiate a loan. He's as much use to his country as a man in the trenches, for this is a war of money and ammunition. Never mind. Clean his pockets out, anyway! This can't last forever! The war will be over and they'll go home, and a few hundred head waiters will retire to their estates on Long Island. The native New Yorker won't let himself be robbed indefinitely after the Europeans have gone back.

Of course it doesn't increase the happiness of the slacker to rob him. But he isn't happy, anyway. He ought to be ashamed, and he is. So his enjoyment is exotic, false. You feel it. He and his idle women crave more and more excitement, and since they've got to pay, they will. It's our harvest. Where once in our cabarets one or two singers came out and tripped and trilled among our tables, now we have a whole light musical comedy troop kicking up, and where of old we had one cabaret show we now have a hundred. One spotlight is enough for a theatrical performance, but the cabaret shows have two and four.

If he's only a transient guest, the European is thinking of the hell over there that he has left and to which he must return. The noise drowns his thoughts. Five years ago one orchestra in a cafe or roof garden was thought enough to jangle poor American nerves out of tune; to-day there are always two for the dancing, to alternate, so that there shall never be a lull in the jangling, rasping row, and usually a third somewhere on the same floor, to keep up the din. Each place must have its Hawaiians, for they can make a racket. What will Americans have become if the war and the orchestras keep up another two or three years?

The transient goes to a roof garden to dance because dancing takes his mind off the gloom at the other side of the sun. And we said last winter that dancing was going out! They dance even at luncheon, these visitors and their Yankee entertainers! The munition agent looks about and asks himself if there can be such death and slaughter as he has seen, starvation over there in Poland and Belgium and Serbia, where little naked children and suffering women have seen the end of the world, while we Americans have all the money there is and laugh gayly as we spend it. Then he spends some Government money, too; and he laughs.

Your real New Yorker turns to his well dressed wife and says: "People don't seem to enjoy themselves any more in this old town. Ever hear such a rotten laugh?"

You never did.

Note the professional dancers on the roof gardens. Gone are the Castles and their ilk. Young American boys dance on, but in ever decreasing numbers. They are being superseded by the European males; the European women crowded out the girls some time ago, for the gay spots in Paris and Berlin could give them life no more. Where those are not dark o' nights, they echo with the groans of wounded soldiers in hospital there; along the Riviera and in Italy gayety dares show its face only at intervals, and then it dies quickly; in London, men and women who dance professionally are called by names that are not pleasant to hear.

"But give the British credit," says a Canadian invalided home. "I saw in their dance halls only men who could not have lived a day in a trench."

And of course they all come here, with the actors and the opera singers, the artists and the comedians. Slim, dark eyed men, types with which we are unfamiliar, are dancing on the roofs. Some of them can speak no English, most of them speak it illy.

The women dancers got out over there while they could. There is the little woman who taught the Crown Prince and the Princess to dance and all the Bavarian gentry; she would starve in Berlin to-day. There are the comediennes from the concert halls that are dark in London; the French danseuse. It wasn't that New York opened its portals to them. They stormed the doors! Our theatres and movie companies couldn't feed them all.

The European at night joins the procession of robbed, with his wife. She must be arrayed in things that float and show plenty of bare flesh; he would not think of going out except in evening clothes. Why, my dear fellow, it's done over there! As soon think of appearing after 6 o'clock in a bathing suit as in tweeds! And the result?

Try to dine in some places in New York at, say, 8 o'clock in the evening or after, in a business suit or with a woman who wears a hat! You are asked to leave before you make up your mind what you'd like to eat—you, a free born American citizen! Look about you in the orchestra circle and the first balcony of our theatres to-day; you will say: "People are getting so much dressier over here! Why, five years ago you'd never see most of the men at the theatre in evening clothes!"

Thank the Europeans domiciled here. Their presence will be felt many a long day after they have gone home. They have brought us money—and taken away our prerogatives. The war has done much, it is responsible for many changes here, and some of them, like the flood of strangers at our hearth, have been beyond our control.

The end must mean good to us, the aftermath as well. With our bank vaults choking with gold bullion we can afford to kick in with the strangers who need us. Give them a hand! The four spotlights and grand opera singers with your movies may have come to stay! And we wouldn't have thought of just those innovations if there hadn't been a war.