

SHOCK AT THE FRONT

BY WILLIAM TOWNSEND PORTER

I

IN Compiègne we lunched and dined — the Carrels, the surgeons, and the guests, for the hospital was a place of pilgrimage — in the garden of a villa commandeered for that purpose. There was good talk there, and a gayety protective against the strain of the wards. When any one cracked a joke, there was a moment's stillness, then each of us grasped his knife and in concert we gravely beat upon the table the refrain of a merry French song.

We were never free from the sound of cannon. All day long and often half the night they thundered from the trenches six kilometres away. But Compiègne, unscarred, slept in the milky sunshine, bedecked with flowers. There was a tennis-court, green-walled with flowering shrubs. We played each day at half-past four; light laughter and pleasant voices floated into the soft sky to meet the satanic overtones of war. To a green bank at the side, men would crawl from their beds to watch the game. There they sat, a smiling, mangled row. One day I found a pipe. It appeared that it belonged to a mass of bandages, a mere remnant of a man, armless, blind. We stop the game, we fill the pipe, light it, and place the stem in the groping mouth. The man laughs, his comrades laugh, everyone laughs — such fun! No man talks of his wounds — his pride and his secret grief.

In the wards we spoke of *choc*. The symptoms were not in question; even

a stretcher-bearer could make a diagnosis. The *choqué* looked the part; he was utterly relaxed, pale as the dead, with eyes like those of a dead fish; he was apparently, but not really, unconscious; his breathing was shallow and frequent; his heart-beat was rapid and feeble; and his pulse scarcely to be felt at the wrist. Much of the blood had collected in the great abdominal veins, the heart was poorly filled, the driving pressure of the blood in the arteries was less than half the normal — too low for the maintenance of a proper circulation of blood to the brain; the brain-cells suffered for lack of food.

The surgeons at Compiègne had noticed that shock came on chiefly after wounds of the great bones, such as the thigh-bone, and after multiple wounds through the skin and subcutaneous fat, as from a shower of shell-fragments. These facts seemed very significant, although I little knew at the time that they would at length lead me to the discovery of the cause of shock.

A question of urgent importance seemed to press for immediate reply: does the life in the trenches, under fire, predispose to shock? The bombardments in this war were of a new and strange intensity. It might be that certain men were sensitized by this highly abnormal environment. In that case a wound not historically grave might bring on shock. If the low blood-pressure and other symptoms of shock appeared immediately after the wound, a preëxisting sensitization was probable. Remedies should then be employed

before the wound was dressed. If, on the contrary, there was a significant interval between the wound and the onset of shock, sensitization was not the explanation, and shock must be the result of forces set free by the wound itself. On the length of this interval would depend the character of the treatment and the moment at which it could be most profitably applied. On the length of this interval rested the serious practical question whether treatment must be given in the dressing-station or in the nearest field hospital.

It was therefore my first duty to measure the blood-pressure immediately after the wound. The wounded at Compiègne arrived too long after their injury. Besides, the hospital was too small. To solve my problem without undue loss of time, it was necessary for me to place myself in a stream of wounded, for shock attacks only one or two men in every hundred casualties. I accordingly went to La Panne.

La Panne is the extreme left of the Allied line, so close to the North Sea that at high tide the spray drifted through the open windows of my bedroom. It was the seat of a hospital of eight hundred beds, ably directed by the celebrated surgeon, Dr. de Page. I was stationed in the *salle de réception*, the receiving ward to which the ambulances brought their loads directly from the firing-line.

There comes a rumble on the stone-paved street, an ambulance drives up, the word *blessé* passes down the corridor, and the *brancardiers* appear with their long staves. A group of dark forms gathers about the motor-car in the starlight, the curtain is unbuttoned, the loaded ambulance stretcher is pulled out, an empty exchange stretcher is shoved in, and the ambulance departs for the trenches.

The mass of dirty cloth and bloody bandages is carried into the ward. A

surgeon comes, rubbing his eyes. The wounded man is radiographed. This done, the radiographer places his hand over the supposed site of the fragment. A great magnet is let down upon the hand. If the embedded steel is not more than seven centimetres deep, the metal object is shaken by the magnetic waves and its vibration can be felt. The radiographer writes for the surgeons a report, giving the location and depth of the fragment.

Meanwhile a nurse shakes my bed, where I lie fully dressed, sound asleep, tired with fourteen days and nights of continuous service. I open sleepy eyes. 'A bad *blessé*. You are asked to take the pressure.'

I find the patient in the operating theatre. An intense light floods the trim surgical nurses, the bloodstained bandages, the patient half naked on the table, — the leg and foot so oddly at variance with the broken thigh, — the three surgeons, in white, their shoes in white sterile wrappers. They wait silently while I put the hollow cuff on the upper arm and the ausculting tambour at the fold of the elbow. The air is pumped into the cuff; the artery is stopped; I slowly diminish the air-pressure; a faint sound in the stethoscope, like a far-off cry for help. I read the gauge — 140 millimetres, the maximum blood-pressure. The air escapes again; slowly the recording needle passes along the dial; the sound of rushing blood increases for the moment; as the artery takes its full size, the sound fades away — 92 millimetres, the minimum blood-pressure. The normal is 97; there is no shock yet.

The patient is turned and a hollow needle is passed into the vertebral canal. Cerebro-spinal fluid is sucked into a syringe containing the anæsthetic novocaine; and slowly the mixture is driven back into the canal. The tourniquet above the wound is tight;

but little blood escapes from the torn vessels. The wound is opened freely. Bruised flesh, fragments of dirt, pieces of cloth, and splinters of bone are scraped out. The bleeding points are ligated. The Carrel tubes are placed for the Dakin solution.

I am at the pulse. Suddenly it fails. He is pulseless. His abdominal arteries have dilated. Through the open gates the arterial blood is rushing into the veins. The man is bleeding to death in his own veins. He becomes deathly pale, the whites of the eyes show, he is scarcely conscious. The nurse hurries the bandage about the padded splint. He is borne to his bed, wrapped in blankets, surrounded with hot bottles. The foot of the bed is placed on two chairs, so that the blood may drain by gravity from the congested abdominal veins back to the heart. The vein at the elbow is prepared. He gets a few drops of adrenalin solution; the pulse comes back, color floods the face; the eyes become natural, they open; he speaks — he is saved.

But no — he is pale again, he vomits, the pulse is irregular. The adrenalin is attacking the heart. Will he die? Shall we have failed him? I pray silently. The ward is hushed. Two, three minutes pass, dragging like hours. The pulse strengthens. The heart is again regular. Youth has its day. He lives. Now, to make sure. Warm serum¹ is passed into a vein. The blood-pressure rises. The arm is bound up. The electric reflector is brought by two men, and placed astride the bed, covered with blankets. Miss T——, a Scotch angel of uncertain age and unfailing devotion, stands by. I wait at the wrist. A single shaded light burns in the great ward; the screens round my bed rise ghostly

in the gloom. We watch, while beat by beat the ebbing flood returns. The clammy hands and feet feel again the warm and healing tide. He lies like a cocoon in his warm blankets. His face is calm. He has cheated the grave. He tells us of his two children. The mother is dead; the waifs are in an orphan home; one is eight years old, the other six; he has not seen them for two years — not since the war began.

Trembling, I go out upon the beach and watch the sea — that northern sea that has looked untroubled on so many foolish wars. The tide is low. The wide sands are smooth and firm. Two officers are out for a morning gallop. In the distance a battery is drilling. The horses are of heroic size in the early mists. I hear the faint thud of hoofs on the hard beach. Above, a solitary aeroplane swoops low, while the observer searches the depths for a lurking submarine.

So the days and the dreadful nights went by, with their unceasing stream of broken men. Often I lay sleepless through the dark hours, while next me howled a *blessé* mad with subconscious agony and the last wild ether dream. But there were compensations. One gave and gave and gave — a blessed thought.

And there were spectacles of poignant interest. Late one afternoon a nurse came running to tell me that there was an English monitor off the beach. We hurried out, full of the charitable hope that she would shell Ostend. The sun was setting. A golden light touched soothingly a half-tamed sea, still sulkily mumbling. A ship of no great size lay a mile from shore, circled by two torpedo-boats. They kept untiringly a ceaseless round. We strained our eyes. Suddenly there burst from her side a flame as big as a house, followed by an immense cloud of black smoke. We held our breath.

¹ A solution of common salt and some other substances in the proportion in which they normally occur in the blood.

In a few seconds there was a sound that was more than a sound. It was a commotion in all that part of Belgium. And then, a moment later, a faint boom, fifteen miles away, where twelve hundred pounds of trinitrotoluol wrought ruin in Ostend, the resort of tourists.

Presently there was another dim sound, like the low curse of a malevolent fairy, —

Strange terrors seize thee
And pangs unfelt before, —

and down from the sky fell a great shell. A mighty column of broken water towered above the waves, and all was once more peace. The spotless nurses walked upon the beach, and we heard the maids laying the table for our evening meal. Again the monitor shook heaven and earth, and again there came the great reply, more threatening than before.

It was enough. A German plane hovered far in the blue and guided with a gesture these mighty thunderbolts. The monitor ceased firing, turned her prow, and made for England, still circled by her tireless guard.

II

The outcome of the work at La Panne was an organization for the systematic treatment of shock, employing all the remedies then known, basing them on repeated measurements of the minimum blood-pressure. These special measures saved two-thirds of the cases, but the questions with which I had come to La Panne were still unanswered. The difficulty was again the interval between the wound and the arrival in the hospital. It was obviously necessary to be actually on the firing-line. Dr. de Page accordingly arranged that I should meet General P——, then colonel commanding the 58th French brigade, in the sector which included Nieuport.

This distinguished officer was a veteran of the Moroccan campaigns. He was brave, gay, and highly intelligent. Like so many of the French, he had an appreciation of physiological science unusual in less favored nations. Claude Bernard had not lived in vain.

One happy day the general arrived in his gray limousine and took me to brigade headquarters. They were in a villa which had belonged to a Belgian of some taste. There was a large living-room, some good prints on the walls, and at one end a billiard-table, now used for military maps. At the other end was the table at which we dined. By this time our friendship had made great strides. The general was enchanted to find that I smoked a pipe. Himself, he adored *la pipe*. His tobacco left something to be desired; it was a species of Algerian hay. I gave him of my choice Virginia leaf. We were brothers. He would visit me in Boston when the war was over.

The dinner was superlatively good. I asked him how he managed. 'Oh,' he replied, 'my chef before the war was the chef of a great New York hotel. But this is easy,' he continued; 'you should have seen him at Verdun. Eight of us and the chef in a hole thirty feet under ground. He had for his art a space only two feet square,' — and the general marked such a space on the tablecloth, — 'but we lived just the same.'

He led me to the maps. 'You will like to see what we are doing to-day. Observe this salient. We make a curtain of fire behind it, so that the Boches can neither get in nor get out. Then our shells destroy their defenses. Every hour an aeroplane makes a photograph. Here are the photographs. You see they are quite large and very clear. Even the posts of the barbed wire show. We do not send our men forward until we see that all the wire is down.'

A dozen steel helmets were brought. The general and his staff helped me to find one that would fit. Then we set out for Nieuport. There I was assigned to Colonel D——, of the 3d French Line, another veteran of the Moroccan wars. Eight delightful days I lived with this dear man beneath the shells.

Nieuport lies upon the Yser, the tidal stream that stopped the German rush for Calais. That June before the world went mad, the peaceful town drowsed in the sun — the pearly Belgian sun that painters love. The men went down to the sea in their fishing boats, or worked their fields; old women, their lace upon their knees, sat in a patch of shade before the door and plied their bobbins; children, with shrill sweet voices, darted about like birds; the creaking wain went to and fro piled high with the harvest. Four thousand simple folk! Not one remains. Their houses too are gone. Their ancient church, their historic tower, are mounds of ruin. And still the hissing shells, hour by hour, day by day, tear down the crumbling walls, adding fresh ruin to a scene most desolate. The people of the sun are gone. Another race inhabits there. They live in holes beneath the ground. They come not forth except to kill.

I too lived in a hole beneath the ground. I came not forth except to save. At least that would have been the wiser part, but the life was so interesting that in truth I roamed about like a boy at the fair. By day the soldiers lay *perdu*. The streets were empty. It was incredible that the blast of a trumpet would raise two thousand men. With the night they swarmed. The place was full of horses and carts, bringing in water-casks, sand-bags, gabions, beams, chloride of lime, barbed wire, ammunition—a hundred articles needed in the trenches. There was

no light except the moon. Strange shadows crept along the roads.

One morning I walked with Lieutenant N——. ‘Suppose we ask Captain B—— to show us a seventy-five,’ he said.

We found Captain B—— in a dug-out lined with beautiful maps. He led us to a passage that dipped beneath the ruins. It was perhaps twenty-five feet long and eight feet wide. At the lower end was the celebrated *soixante-quinze*, poking its shining nose out of a hole in the wall. I sat in the gunner’s seat and trained the cross wires on a distant object, opened and closed the breech, and examined the recoil.

My pleasure was so evident that kind Captain B—— was touched. ‘Perhaps you would like to see some practice on the Boches?’

‘I most certainly should,’ I answered, much gratified.

So the gun crew took their positions, we stuffed our ears with wads of cotton, and Captain B—— went to his post, a short distance away. There he called up an observation tower. The observing officer gave him the number of a square in the German lines, where a few shells might have a salutary effect. The captain called to us the number and the range, 4350 metres. A soldier opened a cupboard in the wall, seized one of the shining brass shells, placed it nose down in a fuse-adjuster, and turned a handle round a graduated scale until he reached 4350. By this operation, the fuse was set to explode the shell at the given range. In an instant the shell was in the piece, the breech-block swung shut, there was an ear-splitting crash, and away flew our compliments to the Boches. The barrel slid swiftly back, spat out the shell-case at our feet, and returned to its position, passing on the way over a cushion of grease. The observer telephoned the result, the range was cor-

rected slightly, and off went another shell. After twelve shots were fired, Captain B—— returned with a pleasant smile to receive our thanks for his courtesy.

This battery was so skillfully masked that I never saw it again, though it was not more than three hundred yards from the cellar where I lived. No wonder the Huns could not find it. There was a ruined garden, with pear trees, in front of my quarters. I used to read in the garden while the enemy tried to silence these guns. Five or six times a minute the familiar curving hiss would rush toward the suspected spot; there would be a loud explosion and a cloud of black smoke. But the seventy-fives were never struck. Sometimes the great shells from our heavy artillery would pass high above me, seeking some distant objective. They gave a new flavor to Daudet. Imagine: three pear trees and an optimist — above, filling all the upper air, the vast soft weary groaning of an eleven-inch shell. This was not bravado — far from it. To stay all day in a damp black cellar was insupportable; outside, one place was as safe as another.

In fine weather we ate our meals — the colonel, three officers, and myself — in one corner of a half-destroyed court. Punctually to the minute, brushed and combed, we arrived at the small round table. Through the centre of the table rose the trunk of a tree, the branches of which were trimmed flat about ten feet from the ground, to make a canopy. We sat ourselves gravely down. The good colonel would fumble in the pocket of his tunic until he fetched out his great horn spectacles. He would place them carefully upon his martial nose. Then he would proclaim '*Ordre*,' in a deep, serious voice, and reaching forward would take up a glass holder containing the

menu. This he would read to us slowly, from hors d'œuvres down through cheese and coffee. It was a way of giving thanks for the food that was set before us. After this ceremony, he would nod to the orderly, whose white coat and brass buttons illuminated the middle distance. The hors d'œuvres would advance. It was the signal for conversation.

Meanwhile, the shells went over, singly or in flocks. I sat on the colonel's right, about eighteen inches from him. He had two voices — one for giving commands to his twenty-five hundred men, the other for ordinary talk. He always addressed me, as a foreigner, in the tone in which he commanded the regiment. The dinner proceeded sedately through seven excellent courses, undisturbed by the artillery.

During my stay at Nieuport two shells fell in that court; one slightly wounded our valuable pump, the other just missed our treasure of a cook. The stove was at the other end of the court, in a recess. The shell exploded outside this retreat. In that neighborhood not a square foot but got its piece of steel. The hurtling storm swept by the culinary shrine. Fortunately, the chef was at the stove, his post of duty; his deserts were great and he escaped unharmed.

On stormy days we dined in the colonel's cave. It was a tight fit. Through an open door we saw our commander's bed, alongside a stove in which the fire never was allowed to go out. Even with this, the walls were always damp.

One evening the soup had just been served when the telephone rang. Lieutenant C——, who was acting adjutant that day, saluted the colonel and reported that a party of Boches were cutting grass behind their third line.

'Tell Captain F——,' said the colonel, between two spoonfuls.

Captain F—— was of the artillery.

Before the soup was taken away, we heard the seventy-fives at work on the Boches. This speed and accuracy was due to the ever-watchful observers. I loved to go to the observation towers, especially at night. They were usually at the top of some ruined building. One stumbled up two or three ladders and at length entered a little wooden cage which held two men, elaborate telephones, and several powerful telescopes. With these you could have seen the buttons on a man's waistcoat miles away. The enemy was, however, rarely visible; he stuck closely to his communication trenches. When darkness fell, the flares began. The French flare had a parachute and for several minutes lighted up hundreds of yards as bright as day. As far as the eye could see, up and down the lines, these witch-fires burned.

The aeroplanes liked to fly near sunset, when the air was quiet. Then we would hear our pompoms, fifteen staccato barks, and a pause. I would rush up the cellar steps and search the sky. There, a mile aloft, would be a German plane. Off would go a pompom, fifteen rounds. A moment later, fifteen soft white fleecy little clouds of shrapnel, like puffs of thistle-down, would break out one after the other, about the flying plane. The planes were often hit, but seldom in a vital place.

The officers' caves were alike in one respect: they all contained mirrors in immense gilt frames. These mirrors had been found in the deserted houses. The major's cave was rather a show place. It consisted of two tiny rooms, dressed with flowers, and very neatly kept. On a table in the 'salon' was a marble bust, a derelict.

'You must not miss my garden,' said the major, swelling with pride.

I looked for the garden; it was not in the room.

'No,' said my friend, smiling indul-

gently at my little irony, 'it is not in here. It is outside. You can see it through the window.'

Now, the window was a cellar-window and opened into a little 'area,' where for the light the earth had been dug away in a space twenty-four inches by twelve. Here indeed was the garden. 'Of course,' continued the major, 'with the ground at my disposal, you would not expect me to go in for shrubs. I have had to content myself with a lawn.' A perfect lawn it was — not a weed — a battalion of tiny bright green grass-blades; very refreshing.

I went into the trenches to measure the blood-pressure. The trenches lay on the other side of the Yser. We crossed a pontoon bridge. Spare pontoons were anchored in the river, in case the bridge should be struck by a shell. We entered a communication trench. Here and there were signs, where men had been killed often enough to show that a German sniper had marked that particular spot: 'Obligatory'; 'Forbidden — in view of the enemy'; 'To grand redan.'

Our trench is narrow and it is deep enough to protect the head. It winds through fields covered with grass and poppies. These overhang the edge and brush our faces. The bottom of the trench is covered with a slatted walk about eighteen inches wide. We meet great pots of hot food, borne on a pole hung between two men. Happily, we are not fat; we slide by without being burned.

Soon we are in the lines. Here are real defensive works, heavily timbered, and with space for many men. At frequent intervals are the burrows in which the men live. Telephone wires run near the bottom of the trench, on the side next the enemy; they are fastened to the earth with long wire staples. From time to time we peep through an observation-hole, but we

do not stand more than two minutes in any one spot; always there are aeroplanes and tower observers on watch, and we may get a shell. The shells are now flying over us, with a noise like the tearing of a great sheet. Presently, we reach the point nearest the enemy. It is near indeed; about the length of a tennis-ground. I look through a periscope and there, as clear as in a clean looking-glass, are long mounds of earth and sand-bags — the German 'trenches,' one hundred and fifteen feet away. Apparently deserted, absolutely silent, they lie heavily upon the unkempt fields, mile upon mile. Their sinister quiet speaks louder than the screaming shells.

The *poilus* are delighted with the blood-pressure apparatus. It is like a game. Their faces are wreathed with smiles. They take off their tunics, roll up their sleeves, and are proud to be told they are 'normal.' We keep our voices low and hug the front wall of the trench, but otherwise we might as well be in the Boulevard des Italiens, though, now I think of it, that also is a dangerous place. We are about to return, when the surgeon is telephoned that an officer is wounded. Bicycles are ordered to meet us at the third line, and we run back. The surgeon is younger but he is a trifle too plump. I keep him in sight. As we approach the machines, he calls over his shoulder, 'Can you ride a bicycle?' 'Perfectly,' I reply. I do not say that it is thirty years since my last ride. We mount, and he hurries off without looking behind. I follow. It is a wild ride. The roads are filled with débris — low heaps of brick and plaster from the tumbling walls. When I go over a heap, my helmet flies into the air; it requires nice calculation to be under it when it comes down. Clark Maxwell is right: science is indeed a matter of grammes, centimetres, and seconds.

III

I had now based the treatment for shock on exact measurements of the blood-pressure, and I had determined that the habitual bombardment does not predispose. There remained the study of the blood-pressure in the fury of an assault, the question of the cause of shock, and the hope of a new remedy. Nieuport was exhausted. The war at Nieuport was all in the day's work. After two years, the daily round was the daily round, and it was nothing more. My comrades told me that, when they were at Verdun, there had sometimes been emotions, if their memories were not at fault. So I went to Verdun, that 'name of thunder.'

I found myself in a military car, flying along the great road that leads to the front from Bar-le-Duc. I was bound for the Mort Homme. Along this road passed the greatest transport the world had ever seen. Gangs of German prisoners toiled constantly to keep the road in repair. For more than thirty miles there was at the side a continuous ridge of broken stone. The working gangs drew steadily from these stores of road-metal and the losses were as steadily supplied. It was a task for Sisyphus, the son of Æolus. On this work hung the destiny of France.

We stopped some miles on this side of the Mort Homme; the road beyond was under fire, and by day it was too dangerous. When night came, we proceeded in the black depths of an ambulance, bumping over shell-holes. I found myself at the Château Esne, a *poste de secours*, at the third line of trenches, in a cellar of what once had been a glorified grange. It was a miserable hole, where one could stand upright only in the centre. The cold mists of late October drove through it, pursued by an eager, nipping wind. My *poilu*, a tall bearded man plastered

with clay, showed me a sort of kennel set off with rough boards picked up in the fields. He brought a sack stuffed with straw for me to lie on. It was dark chocolate color. He surveyed it doubtfully. The honor of France demanded something more. He went to the case containing surgical dressings and cut off pieces of aseptic gauze, which he laid upon the sack, overlapping them like shingles on a roof. I lay down, but not to sleep. When day broke, a cold rain was falling. I looked out on the tragic slopes of Dead Man Hill. Craters and graves—graves and craters, in horrible confusion! Through the Château Esne, that wet dirty verminous hole, had passed thirty-five thousand wounded men. They lay in rows outside among the graves, waiting their turn.

But at the moment there was no great battle here, and I went to the Somme, still searching for emotions. There I was in a rough field hospital of twenty-five hundred beds. They had had twenty-seven hundred fresh cases in a single day. The courteous *médecin-chef* directed an officer to show me to my 'chamber.' I followed the officer. He led me to a low wooden building, somewhat worse than the rest. Within were two rows of tiny cubicles, with partitions of unplanned boards, and a blanket that served for front wall and door combined. Here the staff slept. Between the rows of cubicles ran a dark passage two feet wide. We reached my chamber.

'Be a little careful,' the officer remarked. 'Don't step in that hole in front of your door. The Boches were here last night. They dropped a bomb in there and it has n't yet gone off.'

It was interesting. The French had sent a squadron to bomb a railway junction in Germany. The night was not very clear, and in the excitement an unlucky bomb fell upon a hospital. In

revenge the Germans dropped twelve bombs on the hospital at S—. Fortunately, nine fell in the open, and two did not explode. Mine was one of these. The remaining bomb burst in a crowded building, with very serious results.

Again I was disappointed. The same old mill of death ground steadily, but there was no great offensive. Winter was at hand, and I perforce took ship for home. It was the Espagne. Worn out, I went to bed at eight o'clock the first night out, though we were still in the submarine zone. At once I fell sound asleep. At ten minutes past eleven, I was roused by a voice shouting down the corridor, 'Every one on deck — the ship is sinking.' I sprang from my bunk. Around me all was silence. The others had already gone. I reflected that no great ship ever sank in less than twenty minutes. I could dress in ten. It was a cold November night. In an open boat I should perish without warm clothes. So I put on my uniform and my thick military overcoat, seized my life-belt, and rushed out. In the corridor I ran against a bolted steel door. Fortunately the bolts were on my side. I hastily drew them, closed the door behind me, and ran up the companion-way.

Near the boat-deck I came upon the passengers. As a physiologist, I had read of people gray with fear, but I had never seen them. Here they were, — an admirable observation, — a hundred women and some men, their faces the color of wet ashes. Seen in the mass, the effect was remarkable. The passengers behaved well. There was no screaming. But I was almost the only one dressed *comme il faut*. Most of the women had simply thrown a wrapper over their night-clothes. One man had on nothing but a suit of red pajamas — solid color. I went out on

the boat-deck. The boats were swung out; two were already filled; the deck was littered with coils of rope, over which passengers were stumbling in the dark. A cold wind whipped a rough sea. I drew alongside the engine-room hatch. It was warm there, and one could look over the combing of the hatch and down into the bowels of the ship. A glance showed me that the ship was not taking water in that vital spot.

Before long, word was passed that we had been in collision: another steamer had struck us amidships, tearing a considerable hole just above the water-line. In half an hour we were told that we could go back to bed. I did so and almost instantly fell fast asleep again. At four o'clock I suddenly waked. Something was wrong: the ship had taken a big list; the engines were stopped. I jumped up and looked out. The water was only a foot or two from my port. I dressed again and went on deck. The ship had been canted to keep the waves out of the hole, while the carpenters patched it.

Three days later we had a tombola—a sale for the Red Cross. The red pajamas were put up at auction; they fetched six hundred francs.

At length the voyage was over. I hurried to my farm—sweet haven of rest. I visited my Guernseys. Incredible! I rubbed my eyes. The cows were quite unchanged. Ten million men were fighting for life and an ideal, but the herbivorous poise was not shaken.

For me, the old world had gone.

I could not rest. I was still pursued by the imperious fact that shock was most frequent after fractures and after multiple wounds through the subcutaneous fat. I took refuge in my laboratory, in experiment after experiment. The cause of shock was found, and a new remedy.

Fortune passed on, her ivory wheel half tarnished by the fumes of No Man's Land. I followed her again to France, to test this remedy, and to measure the blood-pressure in a fierce battle, during a barrage more violent than the worst in the great drive on Verdun.

THE TRAGEDY OF ROUMANIA

BY STANLEY WASHBURN

I

MORE than a year has now elapsed since Roumania entered the war. What it meant for this little country to abandon neutrality is not generally realized. Here in America we knew that so long as the British fleet dominated the seas we were safe, and that we should have ample opportunity to prepare

ourselves for the vicissitudes of war and to make the preparations that are now being undertaken and carried out by the administration of President Wilson. Canada and Australia likewise knew that they were in no danger of attack.

But the case of Roumania was far different. She knew with a terrible certainty that the moment she entered