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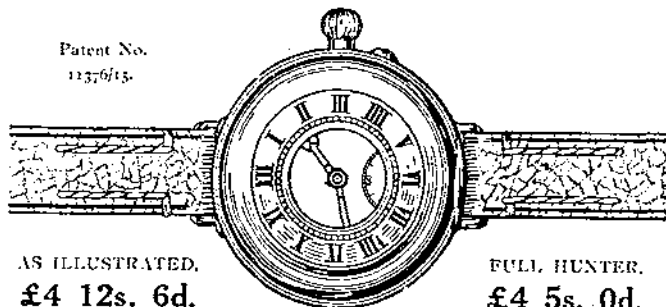
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*Authors alone are responsible for the statements made and the opinions expressed in
their papers.—(G. 5281).*

HORSE MANAGEMENT.

By COLONEL A. S. PRATT, C.B.

THE following lecture was delivered at the Royal Artillery Institution by Colonel A. S. Pratt, and by the courtesy of the Institution we are enabled to place the valuable facts before our readers :—

Colonel Pratt said : First of all I propose to deal with the question of mules. They are very good animals and everybody is liable to get them. As long as you are absolutely quiet with them you can manage them. They are very nervous animals and you must not shout at them. They are very obstinate animals, and you must be quietly obstinate with them and then you will find they will do anything you want them to do. I have in mind the case of a man who knocked a mule about. The mule waited for him three weeks, caught him unawares and broke his leg. Those are rather the lines on which mules go. One of the first things to remember in connection with these animals is that you must be kind and quiet. If you want horses to do well and look well and work well you must be absolutely kind and quiet with them. Make friends of them and pat them and you will find they will do very good work for you ; knock them about and they will not work well. Then I must impress upon you not to play with them. Many men are in the habit of pinching them and tickling them, the result being that the animal says to himself, "Hullo, here is the thing coming to bother me and tickle me, so I must defend myself." Then the animal commences to bite and kick. If a horse begins to bite and kick you may rely upon it he has been taught to do so by being improperly treated by somebody at some time or other. Officers and non-commissioned officers should at once stamp out all signs of playing with these animals, because sooner or later such playing will turn to vice, and it will be a difficult thing to get them right again.

Then there are one or two peculiarities about mules and horses. Mules are more particular about their water and less particular about their food than horses ; horses are more particular about their food and less particular about their water than mules. This is pretty sure to happen to a good many of you before the War is over, that you will have to water a mixed force of horses and mules at a river or pond where the animals have to go in to drink. In such cases always

remember to water your mules first. Horses do not mind so much the water having been stirred up. You will probably know that it is absolutely necessary for all these animals, whether mules or horses, wherever you are, to have as much water as ever you can give them at all times. You cannot over-water, but you can very easily under-water. What are we trying to do now with horses and mules? We are trying to get the animals fit for service in the field either overseas or in England. What sort of animal is going to suit you in the field? Not the animal that has his ribs showing, poor lines down his quarters, and all split up behind; he will last you about a week or two in the field because you do not get your food and water as regularly as in the camp or barracks. What sort of animal do we want in the field? We want an animal on what we call the big rump side. If you lift his tail up it should look as if he has got a good big pair of well-filled breeches on. That is the animal that is going to last you in the field because he has something to go upon in himself. How are you going to get this animal on the big rump side? You are going to get him by very careful attention at all times to four principal things: the first is watering, the second is feeding, the third is pace, and the fourth is grooming.

Water.—I always put water first because I consider that water is the important thing, far more important than anything else. It is a very funny thing, but watering is often forgotten. People do not forget to feed, but they often forget to water. Men often go out on fatigues with half a feed and forget to water. Nobody knows how long a fatigue is going to last, and so, when animals are sent out on fatigues, buckets should be sent out to water the horses before feeding. I saw a man the other day take two horses to water and they were very thirsty indeed. One of them finished first and put his head up in the air. The other one was very thirsty and he went on drinking. The man got hold of the head rope and got a steady pull on him and in time got the second horse to put his head up, and the man at once took him away. I said to him, "Do not take that horse away yet as he has not had nearly enough water." That horse drank at least another bucket full of water before he went away. That horse was systematically water-starved by a driver who did not understand the importance of letting a horse have as much water as it wants at all times. His stomach was all up; his coat was all wrong; and in fact he was systematically "water-starved." What I am driving at is this: when you take animals to water for goodness sake take time over it. Let the horses look about them; let them swish their tails; and if you will only give them time it's a hundred to one that down will go their noses again, and every drop that they can get down into their stomachs the better for them. That is one of the reasons why we always superintend watering. We always ought to have an

officer and a N.C.O., if possible, superintending the watering; it should never be independent. No horse or mule should be moved till every animal has finished watering, because the moment you move one horse the other horses have their heads up and you cannot get them down again. We generally water about three times a day in the winter, and we ought in the summer to water four or five times a day or even six times a day; and they need water late at night when the weather is hot. When you have had a good sweat anywhere you want an extra drink at night, and it is exactly the same with horses. There is one thing to remember about watering, and that is, never offer animals water within say three-quarters of an hour after they have finished feeding, because if you do you may give them colic. I do not say that you will give them colic, but you may do so if you do that. Always allow as long a time as possible, and then you will not run the risk of colic from that cause. I was going round a unit some little time ago—a heavy Garrison Artillery unit—and they had four subdivisions in it. The horses in three of those subdivisions looked pretty bad, and the horses in the other subdivision looked uncommonly well. I happened to be going round with the Sectional Officer and I said to him, "How do you account for the horses of this subdivision looking better than the horses of the other subdivisions?" He replied, "I think I know the reason," and I asked "What is it?" He said "I have a very good sergeant there." I inquired what that sergeant did that the others did not. He said, "When he has got a horse that is a bit thin he is always watering it, and when it is cold he gives it chilled water." One thing about water that has struck me in this frosty weather is that some people bank up their troughs with manure right along the trough. I think it is a very good thing to do because it makes a sort of hot bed and keeps the water warm, and stops it from freezing, and the water is much better for the horses than cold frosty water. Of course you have to invent a good way of doing it so as not to stop the out-flow and things like that.

Feeding.—Then the next important thing is food. If you want animals to do well you must feed them "little and often." You must not give them great feeds because they cannot digest them. They should be fed regularly. If you feed them at certain hours in the day, try and do it regularly. It is well known that 3 lbs. of corn, hard stuff, maize, oats or whatever it may be, is quite enough for the ordinary animal to digest at a meal. When you have 10 lbs. of corn it is much better to feed it in four feeds than in three feeds. When you come to heavy horses where you get 15 lbs. of corn it is far better to feed them five or six times a day. The great secret is to give them little and to give it them often. To carry that a bit further when you are on service give your animals as good a breakfast as you can and

fill your nosebags as full as you can and hang them on your animals and away you go. Probably at about 9 o'clock in the morning somebody will say, "Do you not think we had better feed the animals now?" That would be a very good thing to do, but do not do what I have very often seen people do. I have seen them put the nosebags on at say 9 o'clock in the morning and leave them on, and perhaps they might have 5 or 6 lbs. of corn in them. Some of the horses will eat the lot and some will not, but will mess it about, and will make such a mess of it that the next time you put it on they will not look at it, and you are wasting it. Put their nosebags on by all means at 9 o'clock in the morning and leave them on, but let them have one-third of it; wait two or three hours and let them have another third and so on. In that way you will get through three-quarters of the day with a little something in the animal's stomach. What do you do yourselves on service? You get as good a breakfast as you can, and then put a crust of bread or chocolate or anything in your pocket and have a nibble at it occasionally. If you will do that with the animals and yourselves on service you will neither of you get in late at night with that great big hole in your stomach. I have proved it on service where I had very hard work for animals to do and very little food to give them. I got over the difficulty by giving them about a handful at a time, and, of course, by taking advantage of every drop of water I could get along the road.

Now, about crushed food, wherever you go, you will sometimes find a corn crusher, properly used it is a very useful thing indeed; but improperly used it is a very bad thing. "Never feed entirely with crushed food except in very special cases, which may be called veterinary cases," because if you feed entirely on crushed food what will happen is this, that the animal will get used to the crushed food and his gums will become soft, and when you send him away from here where he cannot get crushed food and he is put on to hard food, the hard food very soon makes his gums sore, and he will not masticate his food, and therefore he will get indigestion. If you have got a horse on the poor side it is a very good thing indeed to give him some crushed food, half and half, and then drop it to one-third crushed and two-thirds hard, and then gradually get him on to hard food altogether. If you send horses overseas that have been fed on crushed food they will bolt the hard food because it hurts their gums to masticate it, and very soon suffer from indigestion. The reason for their falling away will be that they have been fed on crushed food.

Maize.—We have sometimes to feed them on maize because it is a question of the supply of food; we have to feed on what we can get. Now maize as you know is generally fed in the crushed form

and when it gets wet it swells. The result is that it swells in the animal's stomach. Therefore always soak maize well before you feed it, or it will swell in the animal's stomach and give him indigestion or colic.

Chaff.—With regard to chaff a great many people do not think that chaff is much good, especially straw chaff. The answer is that it is bulk you want in the animal's stomach. I have always fed carriage horses, hunters, etc. with a certain amount of straw chaff and a certain amount of hay chaff just to get bulk in their stomachs. Chaff starts the saliva and the gastric juices and helps the animals to digest their food. Sometimes chaff becomes very dusty and musty. Could you eat a pound of biscuits without something wet to help them down? Of course you could not. It is exactly the same with animals. The best thing to do is to put the chaff on a tarpaulin and turn it over and damp it with salt and water, but do not overdo it. Damp it so that when you put your hand in the chaff it just sticks round your fingers; and it will help them to digest their food very much. Of course you generally give the bulk of the hay at night and a little in the mornings. It gives them a foundation for the next feed they are going to receive. Take remounts. You do not know what they have got in their stomachs, as they pass through Remounts we try and get their stomachs right as far as we can. We in Remounts are able to get a certain amount of bran and linseed and so on; you cannot jam a lot of corn into them at once. It is a very good thing to sacrifice some of the remount corn at first and give them extra hay and blow their bellies out. When you have got their insides right you can then begin to shove the corn in and then it will put the flesh on.

Pace.—The next point I wish to deal with is that of pace. There is an Army Council Instruction, that came out in 1916, about the care of horses and pace. It says amongst other things that "The training of a unit should be so directed as to render it efficient and fit for service in every particular including its animals. The instruction of the *personnel* should be carried out well within the capacity of the horses both from the point of view of pace and mileage. It should seldom, if ever, be necessary to exceed the pace of the regulation trot." Now the pace of the regulation trot is 8 miles an hour. It is not half as fast as a great many of you people think. If you measure out half a mile on the Common and you try and trot at that rate you will find you are trotting a great deal faster than you think eight miles an hour is. Any horse that can trot at all can trot at that rate. Men often seem to try and get the horses to trot as fast as they can and the result is that some horses are galloping. All fatigues should always be at a walk and they generally are at most places.

Grooming.—The next important thing is grooming and whisking. Grooming and whisking circulate the blood and keeps the animal in health. Good grooming keeps away lice. We never used to have lice before the War. We get Remounts from all sorts of places and it is up to you to get them right. Then there is another thing in connection with grooming and that is the question of cracked legs and heels. What is a cracked leg and a cracked heel? A cracked leg and a cracked heel is very much the same as a chilblain to you and me. We get our feet and legs and hands wet and cold and the blood stops circulating and we get a chilblain that tickles and breaks. How are you going to stop that in the case of horses? You can stop it by always paying great attention to drying the legs and heels. I know that we have not got any straw now. I have tried to get a little straw issued to every unit for this very reason, to dry these legs and heels. But if you have not got straw you have always got hands and you must make the men get down and rub under the fetlocks as hard as they can, and rub the legs from the fetlocks to the knees and to the hocks, as hard as they can, and start the blood coming from the heart down the arteries and back to the heart up the veins and so get the blood circulating round and round the animal's body down to the tips of his toes. If you will put in a quarter of an hour at evening stables at that it will be about the best quarter of an hour you can put in, and you keep away cracked legs and heels. If men will pay attention to drying legs and heels they will hardly ever get a cracked heel at all. There is another thing. Horses are bound to sweat. Make your men look after them then. The other day I was going round a unit about a quarter to four o'clock in the afternoon and I saw one of the horses there looking all sweaty. I asked "What have you been doing with this horse?" They said, "This horse has only just come in." I asked, "Who has had him?" The reply was, "A mounted orderly." I inquired, "When did he come in?" and he replied, "About a quarter of an hour ago." I asked, "Where has he gone?" he replied, "To his room." I asked, "What has he gone there for?" they told me "I suppose he is coming back to stables about half-past four," and the horse was simply dripping wet. That man had brought in a horse all of a muck sweat with all the pores open and he was just "hanging up to dry." If you do things like that it is a hundred to one something of this kind will happen that in two or three days someone will come and say, "We cannot get No. 23 to eat to-day, Sir." The officer will ask, "What is the matter with him?" The answer will be, "I do not know; I think he has got a touch of fever; his head is all down and his eyes are all shut up and he will not look at anything; I suppose he has had a bit of a chill." Nobody ever knows how he got the chill, but he got the chill a few days ago because somebody

"hung him up to dry." The very best thing is to groom him at once and dry him; walk him about in the air and dry him, throw a rug over him, etc. We lost many horses at the beginning of the War because people would not look after them when they were hot. Those are the four principal points.

Miscellaneous.—I have a few more points that I would like to make which I might put under the head of miscellaneous. First of all wherever you are you always have a certain number of horses on what we call the "hide-bound side." They are just like us; we go out in the east wind and get our livers out of order and want something to put us right inside. The horse and the mule are exactly the same. Whilst going round some stables the other day I saw a horse looking very wretched, and I said, "What are you doing with this horse he looks pretty bad." The answer was, "Well, Sir, we are giving him double the amount of food that any other animal in the stable is getting." I asked if it was doing him any good, and was told, "No, we do not think it is." I asked, "Have you had a look at his teeth?" and they said, "No." I said, "The very first thing when you see an animal looking like that, and his food is doing him no good, is to look at the back teeth and get hold of the A.V.C. Sergeant and it is a hundred to one that if he is a horse of say 9 years of age or over, he will have his back teeth jagged and sharp, and when he eats the sharp edges cut his gums, and he does not like masticating his food, bolts it whole, and gets indigestion, and it does not do him any good." Always have a horse's teeth looked at. Then you must try and get his inside right. If you can get bran you must do that. I know your difficulties in that direction perfectly well. But he wants something of a laxative nature to put him right inside, a bran mash, linseed oil, either in the form of oil of boiled linseed or in the form of soaked linseed or linseed cake. If you have linseed cake broken up small and mixed in the food you will introduce the oil of linseed into the animal's stomach, if it is hard and the horses don't like it, soak it and make a thick soup of it and mix with feeds, and when you have got the animal's stomach working right you can give him extra hard food, and it will do him good; otherwise it is no use cramming hard food into him. There is another thing that you can give a horse and that is Epsom salts—two or three ounces at night; then wait a night and give him another two or three ounces; then wait another night and give him a couple of ounces. That will help him a bit. There is another thing that was recommended to me some time ago, but I have never tried it because I have had plenty of other things, and that is giving a horse a boiled cabbage. I am told that it is an excellent thing, and that a horse will eat it. I was told by a friend, "I always give them a boiled cabbage every Saturday night with their bran mash, and they love it, and it does

them good." Some of you who have gardens might try it with hide-bound animals.

Skins.—Then there is another thing that officers ought to impress on their men, and that is that they should always be looking their animal's skins over to see if they have got anything that might be ringworm or mange, and see that there are no little lumps under their throats which might mean strangles coming.

Noses.—Look at their noses to see that there are no running noses which might be catarrh which often leads to pneumonia and death. Such things as strangles and catarrh are very catching, and the moment a man sees anything that is suspicious he should report it to the N.C.O., and it is everyone's duty to isolate the animal as far as possible till the veterinary officer sees the animal. There is one point in connection with the isolating of these animals that I wish to make. They are often given their water in buckets, and you should see that the buckets of water are offered them till you are certain they have had enough; and when the buckets are taken back they should be carefully cleaned and disinfected, but not at the water-trough, or otherwise they will carry strangles and catarrh half-way through your units before you know where you are. I will tell you what happened to me at the beginning of the War. I had a remount depôt here for two or three months.

Ropes or Chains in Mouth.—We sent down to fetch a lot of horses from the station, and one of the men thought he had got a wild animal to deal with, and he put a rope over his tongue in a half hitch—I suppose the animal jumped about—and he jabbed him in the mouth. He never thought of loosening it again and proceeded to pull the poor brute all the way up to the remount depôt, about three-quarters of a mile, and when the animal got there his tongue was in an awful state, and it took us, in the remount depôt, where we have every facility, about three weeks to get that animal to eat his proper food. Think what would happen to one of your men on service in the field if he so injured a horse's tongue that he could not eat for two or three days! You would lose a horse simply because of bad horse management or bad horse-mastership, whichever you like to call it. Do not put ropes or chains in horses' mouths over their tongues in any shape or form whatever, because you are very apt to injure their tongues.

Impress on Men.—Another thing you should impress on your men, that they are all mounted men now, and if they lose an animal from thoughtlessness or neglect they lose half their good to their country. About three-fourths of the work of every mounted man is the care and management of his animal, because if a battery is not fit to move because the horses are wrong what is the good of a battery of artillery? It does not matter how good a Commanding Officer you

have, or how good a sergeant or sergeant-major you have unless you attend to these matters. If you are going to have good horse-mastership you have got to have every individual in a unit always thinking about his animals, a man is so often on his own on fatigues, etc. A man should always be thinking about his animals somewhat in this sort of way: "How am I going to get water for them? How am I going to get food for them?" He should always be thinking of how he can help them in any way he possibly can.

Keep Harness Soft.—There is one very good way in which you can help the horses, and that is keeping the harness soft. Get your men somehow or other to procure grease and rub it in the harness back and front, because soft harness will not gall a horse like hard harness. I have seen animals cut to ribbons by hard harness.

On the March, Galls, etc.—Supposing you are an officer in command of a unit with a lot of wagons or whatever they may be, when you have been going roughly half an hour on the road choose a nice convenient place by the side of the road, and draw up, and let your word of command be, "Halt, dismount"—not "Fall out"—"Look round and see that your harness is properly fitted." Now one of the principal causes of galls is due to tight breechings. If you put a tight loop round the animal and walk him round the barrack square it commences to rub a little hole and in time it will become a big hole. Now a breeching is properly fitted when the animal is pulling in the breast harness, the breeching should stand well away from his rump, but it should be just tight enough so that when you wish to stop the carriage going down hill he does not go back on the splinter bar. This fitting is only to be done by constant care on the part of all officers, N.C.O.'s, and men concerned. You have always got to be looking at it, especially the fitting of harness, when the animals are on the move. Very well, then, "Halt, dismount, look round, see that your harness is properly fitted, lift up your breast harness, lift up your breechings, tip up your saddles and let the air in, and look round for a gall starting." The moment a man sees what he thinks is a gall starting it is his duty to at once tell the N.C.O. who should at once tell the officer, and they should put their heads together to decide how they are going to stop it. You can stop it by letting out the harness, taking it up, numnah, sheepskin pads, etc., or at any rate getting the friction from where the place is. The good old batteries that went abroad at the beginning of the War could all go on the march for months at the time with hardly a gall at all, because you never saw a battery halt without everybody dismounting, running round his horse's feet to see if there were any clinches up and the shoeing-smith was required, looking round the harness to see that everything was right, and that there was no gall. When this had been done each man would go up to his No. 1 and

say, "All right, Sergeant." With regard to the fitting of the harness, etc., that is one of the reasons why officers and N.C.O.'s have single riders who can go about their command. The normal position of an officer or a No. 1 is in rear of his command on the off side so that he can see what is going on and see that the harness is properly fitted, and he can also see to the driving. Now there are thousands of fellows driving who never thought anything about it a few months ago, and it is up to you officers and N.C.O.'s to help them in every possible way. In fact Officers' Nos. 1 and 2 ought to have their eyes everywhere and see where things are going wrong and then try to put things right; but do it quietly and tactfully.

Sitting on Animals' Backs.—Another thing I often see people offending in is this, that they sit on their horse's backs too long. You must all remember that you are pretty heavy fellows. Supposing you had got a live load on your back and it was getting a bit tired, and it is first on one side and then on the other, that's the way you riders get galls under your saddles, would you not like to get rid of it now and then and give yourself a shake? Of course you would. It is exactly the same thing with animals. Therefore get off your horse's backs and rest them whenever you can. Now there is a point about stuffy stables.

Stuffy Stables.—You will find always grooms who will stop up everything they can in their stables, and they do it because if they keep a horse in a stuffy stable it will make his coat lie down. But the result is that the animal will be a soft animal and will catch a cold sooner than any other horse. Billets in England and France are often bad. Whenever you go into billets or stables have every ventilator open and all the windows open that you possibly can. You do not want to have a direct draught on to an animal's flank because that is bad for him. You want to have the stables cold with plenty of fresh air and then you will have hard horses in them that do not mind being put out to-morrow night and brought in the next night. That is not a good thing to do, but it might be unavoidable. Give them as much fresh air as you possibly can and keep your stables cold.

Branding.—Now, with regard to the question of branding. The only brand that is allowed on horses is the broad arrow brand, 4 ins. to the right and 4 ins. below the near hip. If there is a brand somewhere near that of course you would not go and put another one on. But all horses ought to have that on the near side very visible. Horses ought to be branded for the battery or unit number on the fore feet. The near hind is supposed to be really kept for the veterinary people. All Home Service horses were marked on the near hind foot and they were supposed to have a register in the veterinary hospital so that whenever they went back

to the hospital they were identified, and if they went back too often they were put out of the Service. The hind feet should be left unbranded.

Clipping.—Now as to clipping you all know about the order as to the hair rug being left on horses, the idea is that horses should go overseas with a natural blanket on them and that it should not be too small. A new instruction has come out about clipping and that is that clipping of 3 ins. on the tail need not apply in the case of officers' horses. The reason of that Order as to clipping the horse's tail is to prevent lice laying eggs there, and officers are supposed to have good grooms. With regard to the clipping of horse's legs, the Order is that the hair shall be left on the legs from the elbow and the stifle downwards. "Heels may be neatly trimmed with scissors." If you go and trim them up the back with clippers and trim them round the corn the mud just runs down the leg and into the fetlock, and it gets nasty and wet, you will get a cracked heel. If you leave, as you ought to leave, several inches of hair round about the corn, and do not clip it up above that, the water and mud runs down off the corn and so on to the ground, and does not come into the heel. It does not look pretty perhaps, but all horses should have that little tuft of hair left round the corn as a sort of duct to take the water off on to the ground and not into the heel.

Shoeing.—Now with regard to shoeing and shoeing smiths. Naturally we have in the Army some good shoeing smiths and we have some bad ones. We have lots of men who say that they have had a life apprenticeship, and I am always suspicious of those men because those men have been brought up in their father's forge and there has been their grandfather before them; but they merely know what they have been told by them. These bad shoers say to themselves, "I like a horse with a little foot; he is more active—nippier." Therefore they get rather too small a shoe for him, and they rasp the foot down till it fits the shoe. Then they say, "I do not like the look of this foot and I will polish it up," and they do that from the toe to the coronet. What have they done? A horse's foot is a very porous thing. It is full of little holes and if you rasp it down so as to fit the shoe and then polish it up you open the pores and let in the air and you let in the wet, and in the course of a few shoeings the farrier will come to you and say "We cannot keep a shoe on No. 4." You will ask, "Why?" He will say, "She has got such a brittle foot." I asked a Farrier the other day—"How is that?" He replied, "I do not know, Sir; I suppose it is constitutional." I said, "No, it is not constitutional, do not you see that you have allowed your shoeing smith to rasp it down to fit that shoe, and polish the hoof up to the coronet. You can see the marks of the rasp." He said, "Yes, Sir." Had he known what he was doing he

would not have done it because now he has got to shoe that horse about once a fortnight whereas if he had left him with a good foot it would have lasted about a month. All the military horses before the War had beautiful feet because no rasping down like that was allowed. It is necessary to keep horses' toes short, but they should not be shortened from the front, but from underneath. It is a little more trouble perhaps. I know perfectly well you get a lot of these horses from America with great big feet, and you have to get them right, but you cannot do it in one shoeing. There is an Order just out that you should draw shoes tapped for frost cogs during the winter. Then there is a new Order about bedding, which increases the allowance of bedding and increases the allowance of sawdust from 5 lbs. per horse per diem to 8 lbs. That is a much better allowance. One wants of course to always give a horse a soft bed if possible to induce him to lie down and rest his legs.

Driving.—There is just one thing I want to tell you about driving. I naturally see a lot of bad driving. I see a team coming down a hill with six horses, the wheel driver sitting back and doing all he can to keep the carriage back, and I see some of the lead and centre pulling. If you see them going up-hill you will see the wheel-driver again perhaps urging his horses to go up-hill and see some of the lead and centre taking it quietly. The golden rule is this: The wheel horses do the whole of the work down-hill; the lead and centre should be just thrown out of draught, not with their traces down to the fetlock, as one so often sees them, but just eased. The moment you begin to go up-hill the lead and centre horses should do most of the work. If you will only do it in that way you will divide your work equally between your lead and centre and wheel and you will not have, as you will always see in bad driving, teams, the wheel horses looking comparatively thin and the lead and centre horses looking comparatively fat. Why cannot you pull going up-hill? Very often for this reason, that you will allow your leading horses to get too near the thing in front of you. The Order is "From the noses of the lead horses to the tail of the thing in front of them, 4 yards." How often do you have it 4 ins.? Then the horses cannot pull. When you are in single units there is no reason why you should not take 40 yards and let all your horses pull. It is a very good thing in dusty weather because you will keep the dust out of the men's throats and out of the horses' throats too.

Now whether you have got a horse sick, whether you have got a horse lame or whether you have got anything the matter with him, if he has got a heavy load to pull or carry, and if you want to help him, just say to yourself, "Now how should I, if I were the animal, like to be treated under these circumstances." You may depend upon it, on the way you decide you would like to be treated your-

self, you would not go very far wrong in treating the animal that way.

Notes, How not to do it.—I have made one or two notes of instances that I have seen where I am sure you would not like to be treated in that way yourself, and many of them round about Woolwich. First of all, not very long ago, I saw some horses standing on the Common and they were on fatigues. They were taking some stuff that had been dug up and put in the cart half a mile away or so, and shooting it and coming back. They were standing. Naturally they got a bit warm when taking this stuff away, and it was a biting wind, and they had no rugs on. It is in those circumstances that chills come along. The officer who was in command of the battery or his Sergt.-Major might have thought of rugs being sent out on a job like that. I saw some men coming down Shooter's Hill not very long ago, and they were on a manure fatigue. It was a very wet and foggy morning. They had their horse's rugs with them, but they had them on their knees when sitting on their boxes. There was nothing wrong in that; but those rugs were turned inside out and were being wetted, so that when they came to be put on the horse's backs they were damp to the horses. You would not like to have rugs on you that were so wetted. I saw some horses being clipped and the man who was clipping them wanted one of them to stand up. The man who had got hold of the twitch proceeded to pull the horse by the twitch, the twitch is often used unnecessarily. Would you like that? I know of a case of some horses sent on fatigue at early morning stables. The driver asked if he should water them. "No," said the Sergt.-Major, "you will not be long." The result was that the horses waited at the field stores and were not back until one o'clock, and neither of them had a drop of water or food. I should not care to have that sort of man for a Sergt.-Major. I saw some young officers the other day in charge of a battery. They dismounted the battery and they were all sitting on their horses themselves. Was that a good example? Get into the habit of getting off your horses whenever you can. I saw some young officers the other day coming down Shooter's Hill, and some of the lead and centre horses were pulling and a young fellow I noticed never looked at his horses, but had his eye fixed on something or other down the road. That does not help horses. I saw some fellows going round a corner the other day and the moment they went round the corner at a fair trot the fellow leading trotted away and he never checked his pace, and the others began to canter in the rear, the consequence being that they strung out. What happened? They pulled up one on the other like a lot of cattle trucks and got treads. That man was a bad leader. When you go round a corner you must check the pace and keep looking back to see what is going on behind you. Good driving helps

animals tremendously, but bad driving is very hard on the animals indeed. There is nothing worse for them than bad driving, though of course we cannot help it sometimes. If you will only remember that horse-mastership is nothing but common-sense and forethought you will do well. Think a bit ahead and think how it is going to affect your animals if you do certain things with them, and think how you can help them in every way. I have often been asked the question about watering horses when they are hot, and my answer to that question is that when horses are hot, if you are going to groom them in the stable at once it does not matter letting them have plenty of water; but if you are going to hang them up for half an hour do not let them have too much. In other words use your own discretion, and do not do what I saw people do the other day: they had their horses out at riding drill, and brought them in in a muck sweat and watered them, hung them up to dry and one of them had colic and not to be wondered at.

In reply to a question Colonel Pratt said the length of hair on the heels should be about 2 to 3 ins., just enough to make a sort of duct to take the water off, so that the water will fall outside the heel.

*PORTABLE HUT FOR THE U.S.A. EXPEDITIONARY
FORCE.*

THIS type of portable house was designed to be manufactured in America for use in Europe. The U.S. Government called for buildings giving 2,500,000 sq. ft. of floor space to be produced in 60 days. They were to be capable of erection by unskilled labour.

Owing to the short time given for manufacture portability and ease of erection were not the only factors that affected the design. Ordinary hut construction involves work at the sawmill and then again at the manufacturer's yard where the timber is put into shape and assembled. In this case however owing to the speed condition it was necessary to design so that, with slight additions to the plant, all the work could be done at the sawmills. This design therefore departs considerably from common practice and has been criticized in consequence where the speed factor has not been taken into account.

The building is on the panel system, all floor, roof, and wall coverings being in panel units. Special panels are required for the gables. The wall panels are of three kinds, one plain, one provided with a sash window, one with the framing for a door.

The floor panels are made of two layers of grooved and tongued flooring of random widths from $2\frac{1}{2}$ to 6 in., the grain being crossed. Between the layers is tarred paper. The boards are nailed at each intersection. The side edges of two layers do not exactly coincide thus forming a $\frac{3}{4}$ -in. rebate at each side so that two adjacent panels have the equivalent of a matchboard joint.

The wall panels are made on exactly the same principle; the only difference is the insertion of a sash window or door frame in some of them.

The roof panels are only single ply held together by four battens. As in the other panels random widths of boarding ($2\frac{1}{2}$ in. to 8 in.) and as short as 3 ft. $2\frac{3}{4}$ in. can be used which is a considerable advantage. The roof panels do not profess to be waterproof since they are intended to be covered with composition roofing.

Considerable thought has been given to the design of all details. They appear simple, but are said to be the results of many trials to make erection by unskilled labour as easy as possible.

The trusses are sufficiently explained by the drawings. It will be noticed that the truss spacing is twice the width of a wall panel

and that roof and floor panels are the same length. The building is 20 ft. wide and the average length is intended to be 217 ft.

The *foundations* consist of three rows of posts spaced at 7-ft. intervals. To these are spiked *sleepers* (two 6 in. \times 2 in.), cut in random lengths. The *floor joists*, at 28-in. centres, rest on the sleepers. On the joists and spiked to them rest the floor panels, each with its long dimension parallel to the sides of the hut. Outside the floor panels but not on them and spiked to the joists are the *floor sills* lying directly under the wall framing.

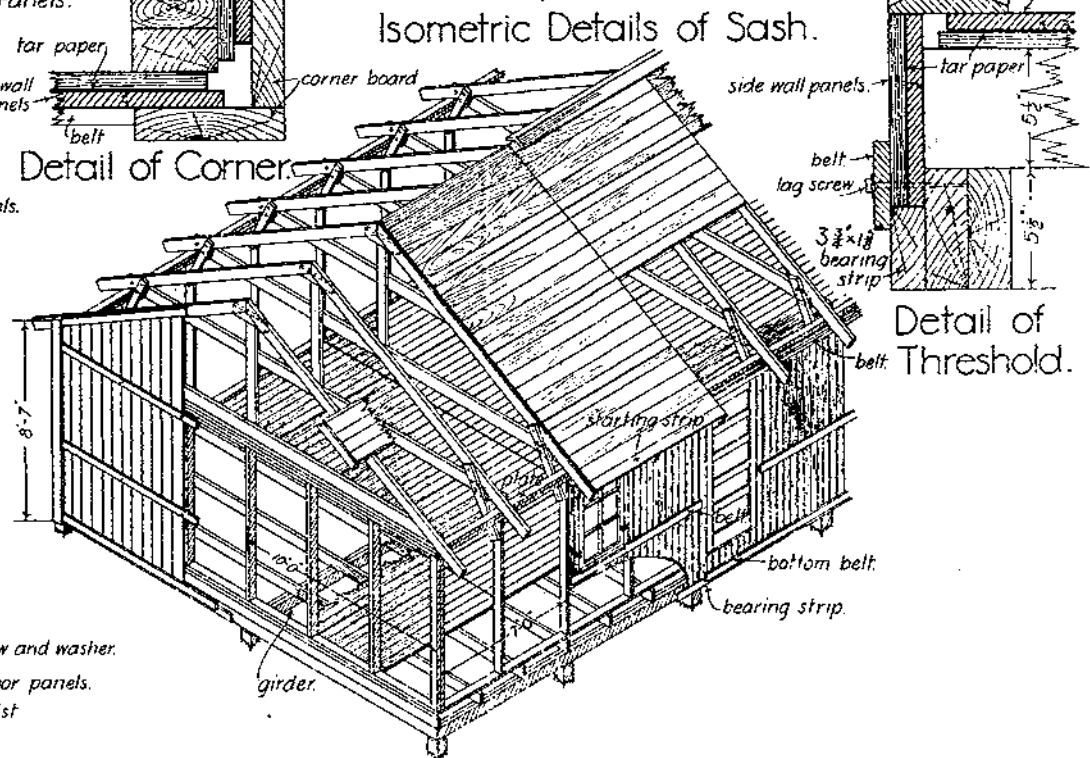
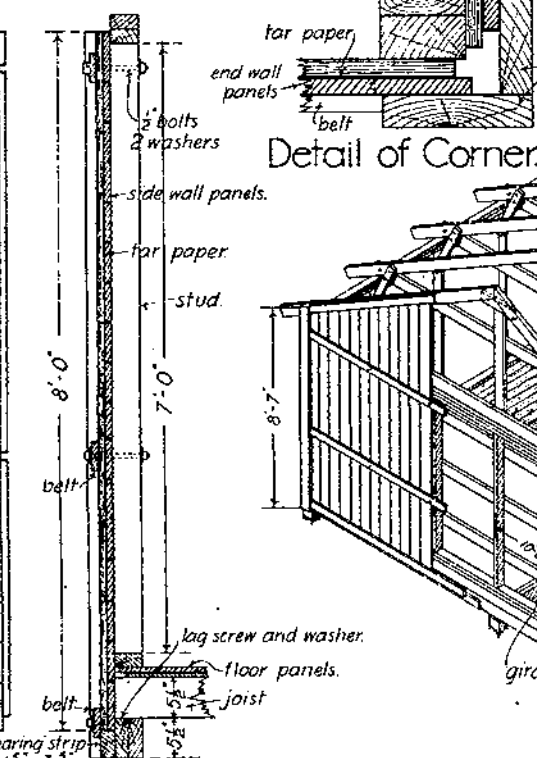
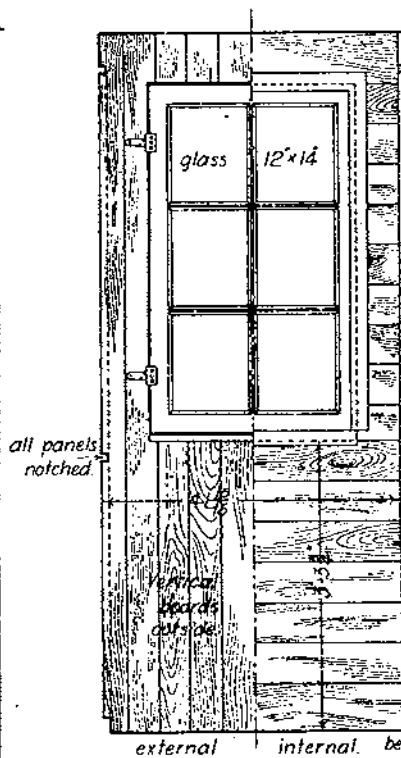
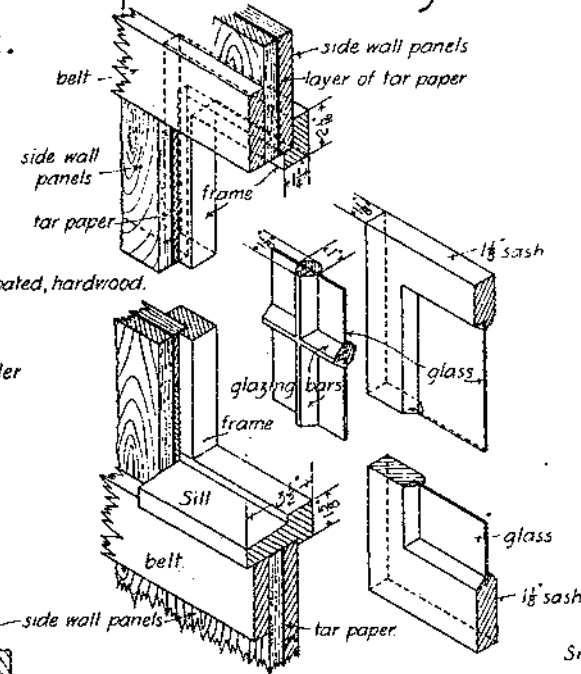
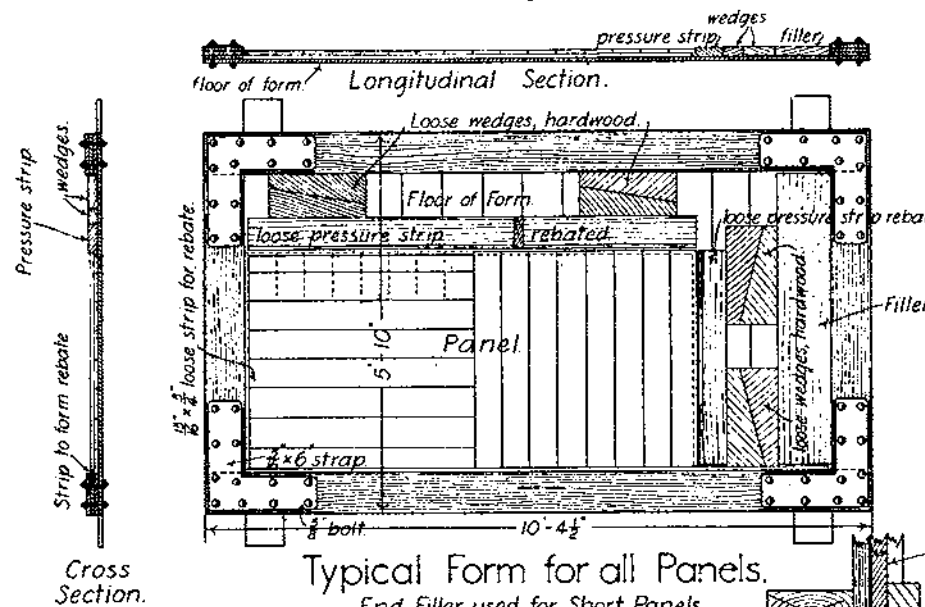
Bearing Sills are nailed to the outside sleepers so that their lower edges and those of the sleepers are flush with each other. When the *corner posts*, (each made of two 4 in. \times 2 in.), and the intermediate *studs*, (each 4 in. \times 2 in.), are in position the wall panels are placed with their lower edges resting on the bearing strips. Three horizontal *belts* then go into place outside the panels and coach screws (lag bolts) are inserted through belt, panel, and stud. (All the holes for these are drilled ready at the works). The *top sill* is made of two 4 in. \times 2 in. pieces cut in random lengths breaking joint.

It will be seen that the side wall panels are tied in at the bottom by a bolt to the sleepers and at the top by the trusses while they also bear against the ends of the floor joists. This detail gives some leverage which adds considerably to rigidity when the whole framing is bolted up.

Erection can be carried on so that after a short length of building is completed side-wall studs, panels, trusses, and roof panels are all being erected simultaneously and but a short distance apart. In a trial erection three men laid all the floor timbers and floor panels in a 217-ft. \times 20-ft. hut in $2\frac{1}{2}$ hours. All the parts are numbered and lettered to simplify erection and care has been taken to cut to exact dimensions so as to get easy fit.

The above description and the accompanying drawing are based on information given in the *Engineering News Record*, New York, Vol. 80, No. 1, January 3rd, 1918.

Portable Hut for U. S. A. Expeditionary Force. 20' Wide, 7' Bays, - Panel System.



Sash Panel. Section, Typical Panel.

Isometric View. (20ft. building.)

REVIEWS.

PAGES D'HISTOIRE, 1914—1917.

Published by the Librairie Militaire Berger-Levrault, 5—7, Rue des Beaux-Arts, Paris.

The 143rd volume of this series is entitled *Le Retour de l'Alsace-Lorraine à la France*; the contents of the volume deal with perhaps the most burning question of the day, that of the restoration of the frontiers of France as they were before the Franco-German War of 1870.

In a Preface to this volume Monsieur Henri Welschinger, of the Institut de France, tells us that no one has ever had any doubt as to the eventual restoration of Alsace-Lorraine to France. Alsatians and Lorrainers have been looking forward to this event with a confidence which cannot be shaken. Forty-six years have elapsed since on the 17th February, 1871, a solemn vow was registered on this subject at Bordeaux; it was religiously renewed at Berlin, in 1874, to the intense dismay and anger of the Germans, who even at the present day are unable to comprehend the inner meaning of such an attachment and of such fidelity as that of Alsace-Lorraine to France. The War of 1914 has effectually disposed of the Treaty of Frankfort, and Alsatians and Lorrainers have through their leaders, from the first days of the War, made it known that they consider as *null and void* the pact wherein they were disposed of body and soul without their consent. They witnessed with delirious joy the arrival of French soldiers on their sacred soil and the removal from their frontiers of the boundary marks bearing the hated design of the black eagle with its outstretched grasping claws. A thrill of emotion ran through the whole people on the day that General Pau arrived at Mulhausen, and also on that on which General Joffre visited Thann to deliver the message of affection from France to the two Provinces and to renew the solemn promise that their traditions, their customs, their religious tenets would be respected. England, Italy, Russia, the United States, all the Entente Allies and the friends of France have admitted that the claims of Alsace-Lorraine are just and that no peace will be of value which does not secure the restoration of these Provinces to France. Monsieur Welschinger calls attention to Lord Curzon's speech of the 19th December, 1916, and that made by Monsieur Terestchenko, the then Russian Foreign Minister, on the 20th May, 1917; on both these occasions the fact that the restitution to France of the occupied Provinces was one of the War aims of the Entente Powers was emphasized. Even when, subsequent to the revolution in Russia, the formula of a peace "without annexations and without

indemnities" had been adopted in that country, Germany was made to understand by the Ministers of Russia's Revolutionary Party that in their understanding of a *statu quo*, the return of Alsace-Lorraine to France did not fall into the category of *annexations*; the surrender of these Provinces by Germany, on the contrary, was considered by them to be a pressing necessity. Later, on the 31st July, 1917, Mr. Arthur Balfour, in a reply made by him in his capacity of Secretary of State for Foreign Affairs to Messrs. Bryce and Buxton, stated that Great Britain had not entered the War for any selfish ends, but to deliver Europe from German oppression and to provide against the possibility of Wars in the future. It was necessary, he said, that, *inter-alia*, aid should be given France to enable her to be reconstituted as she was prior to Bismarck's machinations of 1870 against her. On this occasion, Mr. Balfour pointed out that the restitution of Alsace-Lorraine was a question of intimate concern to Great Britain; in looking forward to the reincorporation of the lost Provinces into the territories of France, it was evident his countrymen cherished no selfish designs.

German agents had been working for some months past to bring about a schism in the ranks of the Entente Allies by taking advantage of the War weariness prevailing in certain quarters; the reiteration, therefore, by prominent statesmen of the War aim concerning Alsace-Lorraine undoubtedly came as a surprise and created consternation in the Fatherland. Michaelis, the then newly-appointed Imperial Chancellor, had, on the 28th July, 1917, attempted to ridicule the sentiments regarding Alsace-Lorraine to which expression had been given in the French Parliament, but after the speeches made by Mr. Balfour and Monsieur Ribot, the French Premier, on the 31st July, 1917, he certainly had no longer any excuse to remain in ignorance as to the tenacity with which the question of France's claim to the two Provinces was being continued and would continue to be pursued by the Entente Powers.

Monsieur Welschinger tells us that having in view the widespread sympathy entertained not only in Europe but throughout the world for Alsace-Lorraine; in view also of the moving debates that have taken place in the French Senate and in the Chamber of Deputies on the subject of the restoration of the lost Provinces to France, he has felt that a useful purpose would be served by collecting together in one volume the protests raised, in 1871 and in 1874, at Bordeaux and at Berlin respectively, by the representatives of Alsace and Lorraine, as also copies of the proceedings in the French Parliament and of the record of the official statements relating to the spoliation of France by Germany.

Monsieur Welschinger has also included extracts from a diary, hitherto unpublished, in which he made a record, at the time of their occurrence, of the events of 1871 connected with the transfer of Alsace-Lorraine from the protection of the tricolour of Liberty to the bondage of the yellow banner with the black eagle of Tyranny. He concludes the Preface by giving expression to the following hope:—"May this modest collection bear all the fruits which I await therefrom, and increase still more in the breasts of those who read it love for Eternal Justice and horror for brutal Tyranny." The contents of the volume are arranged in twelve short chapters and five appendices.

The first chapter relates to the Protests of Alsace-Lorraine made to the National Assembly whilst sitting at Bordeaux, on the 17th February and 1st March, 1871.

At the meeting of the National Assembly held on Friday, the 17th February, 1871, Emile Keller, Deputy for the Haut-Rhin, read the Protest framed by Gambetta in consultation with his colleagues from Alsace-Lorraine, and made a speech which moved many of his audience to tears. Monsieur Keller concluded his introductory statement with the following remark:—"I am convinced that the proposals which I am about to place before you will receive your unanimous assent, for it affects our honour and our unity as a nation; on this point there should be no difference of opinion in a French Assembly." He then proceeded to read slowly in a firm tone the declaration which had been drawn up, the main heads of which were as follows:—

I. *The wish of Alsace and Lorraine is that they shall not be alienated.*

The framers of the declaration proceed to point out that the two Provinces had been associated with France for over two centuries, constantly exposed to the aggressions of the common enemy; they had continued at all times to suffer sacrifices in the national interests; they had sealed with their blood the indissoluble pact which bound them to France. In view of the claims then raised by a foreign Power they affirmed in the presence of the dangers which surrounded them, and, whilst still under the yoke of the invader, to declare their unshakable fidelity to France. Both those remaining at home and those fighting under the tricolour, the former by their votes and the latter by participating in active operations, desired unanimously to make known to Germany and to the world at large their immutable wish to remain French.

II. *France can neither consent to nor sign any document ceding Lorraine and Alsace.*

It is pointed out in the declaration that the cession of the two Provinces, if agreed to, would imperil the national existence of France, would be tantamount to an abandonment of those who had established, by reason of their patriotic devotion to France during two centuries, the right to look to her for protection and would also result in the infliction of a blow on France, which could not fail to divide her own people. It was further argued that an Assembly, even when elected by Universal Suffrage, could not invoke its sovereignty for the purpose of covering or satisfying acts which aimed at the destruction of the entity of a nation.

France might be obliged, it was admitted, to submit to the blows of a Superior Force, but it was not permissible for her to legalize the latter's decrees.

III. *It is not within the province of Europe either to permit or to ratify the act of abandonment of Alsace and Lorraine.*

Admittedly civilized nations are the guardians responsible for seeing the rules of justice and international law properly administered; they could not for long remain indifferent to the fate of their neighbours without incurring the danger of experiencing treatment similar to that which they might have acquiesced in when meted out to others. "Modern Europe cannot," continue the framers of the declaration, "allow a people to be taken possession of as if they were mere beasts of the field; it can-

not remain deaf to the reiterated protests of threatened peoples ; it must, for its own protection, forbid such an abuse of Force."

It was further pointed out in the declaration that a peace which involved the cession of territory by France would only result in a disastrous truce and would not be of a lasting kind. Indeed, such a peace would give birth to a perpetual internal agitation, and would only end in provoking another war. The peoples of Alsace and Lorraine entered a vigorous protest against the cession of these Provinces to Germany, and called upon their fellow-citizens of France, the Governments and peoples of the whole world to bear witness that they would hold as null and void all acts and treaties, votes or plebiscites, which might give consent to the abandonment of the whole or a part of the Provinces of Alsace and Lorraine into the hands of a foreign Power.

In the concluding paragraph of the declaration it was stated : " We, here present, proclaim the right, which remains for ever inviolable, of Alsatians and of Lorrainers to continue to exist as members of the French nation, and we enter into a solemn obligation, as well on behalf of ourselves as of our constituents, our children and their descendants to press our claims, perpetually and by every means in our power, against every usurper."

When Monsieur Keller had finished reading the declaration, he called upon the Assembly to take immediately into consideration the unanimous views of the representatives of the Bas-Rhin, of the Haut-Rhin, of the Moselle and of the Meurthe and demanded that a vote should be at once taken on their proposal. In the desperate situation in which France found herself, the Assembly could do no more than place this matter of the protest in the hands of the negotiators and rely on their wisdom and patriotism for the solution of the very difficult problem with which France was confronted at the time.

On the 1st March, 1871, Monsieur Keller again raised a protest on behalf of Alsace and Lorraine. A painful debate followed. The Assembly, however, found itself compelled to accept the preliminary proposals relating to peace (546 votes for and 107 against).

Then followed the last incident of this tragic meeting. The third representative of the Haut-Rhin, Jules Grosjean, a former Prefect of this Department, who had taken part in the defence of Belfort, rose in his place and read a final protest of which the following is an outline :—

The representatives of Alsace and of Lorraine communicated to the Assembly, before any negotiations for peace had begun, a declaration in which they affirmed in a very formal manner the wish and the right of these Provinces to remain French.

Delivered, regardless of all justice and owing to an abominable abuse of force, to the domination of a foreigner, the representatives of Alsace and Lorraine have a last duty to perform. These representatives repeat once more that the agreement whereby the Provinces may be disposed of without the consent of their inhabitants will be held as null and void by them.

It will at all times be open to all or any, Monsieur Grosjean pointed out, to press for their or his rights in such form and in such measure as their consciences may dictate.

Before quitting the Assembly, in which their self-respect no longer permitted them to retain their seats, the representatives of Alsace and Lorraine made it known that in spite of the bitterness of their grief, the uppermost thought in their minds was a feeling of deep gratitude to those who for six months past had not ceased to defend them, and that they continued to retain an unquenchable affection for the Motherland from which they were being violently torn.

They would await with complete confidence that future day when France would be in a position to resume that great place in the world reserved for her by Destiny.

The feelings of the sons of the lost Provinces are admirably summed up in the final words of the protest: "Your brothers of Alsace and Lorraine, whose family ties are from this moment about to be broken, will cherish for France, absent though be her authority from their firesides, a filial affection which will endure until that day when she once again assumes her sway over them."

Such was the last sob of the two Provinces. The Assembly, in vain, endeavoured to persuade the representatives of Alsace and Lorraine to retain their seats in the Legislature; however, they rose from their seats and silently withdrew, their departure being unanimously regretted by their colleagues. Next day all the Bordeaux newspapers appeared in mourning.

In spite of the elapse of more than four decades, the feelings of the peoples of these two Provinces remain unchanged. The incidents which took place at Zabern before the War led the German Deputies to admit in the Reichstag that the attempt to germanize Alsace-Lorraine had failed.

With the declaration of War by Germany against France, on the 2nd August, 1914, the provisions of the Treaty of Frankfort ceased to have practical effect. Some there are who consider that Alsace-Lorraine should be sounded upon the question of their restitution to France. However, a strong feeling exists in influential quarters that, since the people of these Provinces are known to have remained unanimously loyal to France, no useful purpose would be gained by canvassing them. Further, an Entente victory can alone ensure the fulfilment of the longing wish of Alsatians and Lorrainers who have obstinately and voluntarily remained French at heart.

The second chapter contains extracts from the diary which Monsieur Welschinger kept at Bordeaux, in 1871, in his capacity of official custodian of the records of the National Assembly.

The chapter opens with the proceedings of the meeting of the National Assembly held at the Théâtre Louis, Bordeaux, on the 17th February, 1871. Monsieur Jules Grevy was, on that day, elected President of the Assembly. In his opening speech he referred to the peril in which France was placed. Formal business having been disposed of, the President then called upon Monsieur Keller to address the Assembly, who at once rose in his place, dressed in the tattered uniform of an officer of the Mobile. The silence of those assembled in the hall was impressive. Monsieur Keller had a great reputation as an orator; he was a patriot and an ardent Catholic, a loyal Alsatian and an uncompromising one at that.

Monsieur Welschinger touches upon certain matters connected with the framing of the declaration containing the protest of Alsace and Lorraine and tells us that when Monsieur Keller was reading it at the meeting of the National Assembly held on the 17th February, 1871, many of its passages were received by the audience with much applause. Monsieur Keller, after he had finished reading the protest, made an impromptu speech and concluded it in the following terms :—" We are in the position of the sailor who, having sunk his ship rather than surrender it into enemy hands, seeks to regain the companionship of his brethren in arms. We hold out our hands to you. . . . Do not refuse to give us yours ! "

The whole Assembly was profoundly moved when Monsieur Keller, who could not hide his own emotions, returned to his seat at the conclusion of his oration. The question as to the next step which should be taken by the Assembly was one which required delicate treatment. Monsieur Thiers rose in his place and stated that on so important a matter the first question to be decided was whether the Assembly should issue definite and imperative instructions to its negotiators or allow them a certain latitude of action. He stated, with tears in his eyes, that he shared fully in Monsieur Keller's sentiments, and thereupon invited the members to meet immediately at the offices of the Assembly to discuss the whole situation ; he wished each of his colleagues to make known what he really desired should be done, " for, it is as well it should be understood," he added, " that you cannot take refuge behind the Government you will be placing in power. Have the courage of your opinions ; whether for War or for Peace ! The question is one not affecting the fate alone of the very interesting Provinces, but the destiny of the whole nation is involved." These words, coming as they did from one elected by 26 Departments, one who had been nominated Head of the Executive of the new Republic and charged with the duty of settling the terms of a disastrous peace with the enemy, caused as may well be imagined, a deep impression. Monsieur Grevy thereupon sought the views of the Assembly. It was decided to adjourn to the offices of the Assembly in order to discuss the proposals as suggested by Monsieur Thiers. An hour and a half later (5.30 p.m.) the sitting of the Assembly was resumed. Monsieur Beulé reported that the Commission had with but one dissentient vote agreed to the following resolution :—" The Assembly, having received with the deepest sympathy the declaration of Monsieur Keller and his colleagues, leaves the matters in the hands of the negotiators, trusting in their wisdom and patriotism."

" That is a blank cheque," cried Monsieur Henri Rochefort ; whereupon many voices were heard replying " What else could we have done ?"

The Assembly then elected Monsieur Thiers chief of the Executive. Monsieur Victor Lefranc thereupon recalled the qualities which entitled Monsieur Thiers to the confidence thus shown in him and urged his colleagues to strengthen Monsieur Thiers's hands by affording him their support with unanimity. On this proposal being put, it was carried by the representatives rising in their places. Monsieur Thiers's colleagues then pressed round him to congratulate him.

The sitting of the Assembly came to an end at 6 p.m. ; the members

had been deeply stirred and the excitement at the close of the proceedings beggars description.

Monsieur Welschinger tells us that on the evening of the 17th February, 1871, he recorded his own impressions on the situation. He felt certain that had the Assembly been called upon to vote at once on Keller's proposal, it would have been carried without a doubt; but the time given for deliberation brought out clearly enough that the French Army was no longer in a position to put up a good fight. It has been thought by some that the decision arrived at by the Assembly, on the 17th February, 1871, was imprudent and exhibited a willingness to purchase peace at the price of immense sacrifices. Bismarck is also reported to have taken courage at this demonstration of weakness and it has been stated that, whereas he had been willing to accept Strassburg only and a War indemnity of 80 millions sterling, in consequence of the Bordeaux decision he at once put forward bigger demands; Monsieur Welschinger definitely states that this was not so, for the Iron Chancellor had, after the refusal of the armistice proposed on the 31st October, 1870, already made up his mind to rob France of both Strassburg and Metz and was most obstinate on the subject. It was alone owing to the patriotic zeal and skill of Monsieur Thiers that the reduction of the War indemnity from 240 millions sterling to 200 millions sterling was secured, and that France was allowed to retain Belfort, Longuyon, Briey, Nancy, Lunéville, St. Dié and Montbéliard, places which the Prussian General Staff wanted (*vide Causes et Responsabilités de la Guerre de 1870*, by Henri Welschinger).

The third chapter deals with the motion tabled by the Deputies for Alsace and Lorraine at the sitting of the Reichstag held on the 16th February, 1874. The motion ran as follows:—

“May it please the Reichstag to decide that the inhabitants of Alsace and Lorraine, who, without being consulted, were annexed to the Germanic Empire by the Treaty of Frankfort, may be called upon specially to record their views on this annexation.”

The motion was supported by 14 out of the 15 Deputies for the two Provinces, it came up for discussion at the sitting of 18th February, 1874. At the opening of the proceedings Monsieur Teutsch, Deputy for the Zabern District, and his colleagues requested permission to address the Reichstag in French, but this was opposed by the German Deputy Braun. The President of the Reichstag ruled that in accordance with Article 21 of the Standing Orders the use of German was alone permissible in addressing the Reichstag and invited Monsieur Teutsch to open the discussion in German. Amidst derisive laughter Monsieur Teutsch explained that German was not his mother tongue; he was continually subjected to interruptions whilst he continued to pour home truths into the ears of his audience of the Reichstag. He declared that Germany had strained her rights in compelling France to sacrifice 1½ millions of her children; it was indeed sad to see Germany, at the end of a century of enlightenment and progress, setting herself the task of conquering and reducing a whole people to a state of slavery; the sentiments relating to right and honour were offended by her conduct; Professor Bluntschli, one of Germany's juridical shining lights, had, in his book on *International Law*, recognized that, in order to make a

cession of territory incontestable, such cession should first be accepted in principle by its inhabitants; Napoleon III. had always consulted the peoples of a territory before annexing the same; Alsace-Lorraine was irresistibly drawn towards France and nothing on earth could destroy their attachment for her; the Deputies representing Alsace-Lorraine had been sent to the Reichstag to make known the existence of these indissoluble bonds, and to say that if Germany should shut her eyes to the fact and should abuse her victory, the result would only be new wars involving further ruin and fresh victims. The Reichstag, however, received the proposals of Monsieur Teutsch and his colleagues with laughter and vulgar abuse.

The predictions of Monsieur Teutsch and his colleagues have, in spite of the ironical taunts which they met with at the time from the Junkers, come only too true. Germany has since those days remained armed to the teeth and has continued to increase her military forces, imposing a heavy burden on her own people. The attitude of Germany made it necessary, at the same time, for other European Powers continually to adopt measures to defend themselves. The conquered territories have been a source of weakness rather than of strength to their new Rulers; they have with patience and obstinacy resisted all efforts to germanize them. In spite of a *régime* of cunning and hypocritical oppression, German Kultur has proved itself too impotent to make any impression on Alsace-Lorraine so that, in 1914, on the eve of the outbreak of the War, Von Bethmann-Hollweg felt obliged to admit Germany's failure to placate the peoples of these two Provinces. The popular refrain:—

Vous n'aurez pas l'Alsace et la Lorraine,
Et, malgré vous, nous resterons Français.

represents the true condition of affairs even to this day.

The fourth chapter contains the full text of the speech, delivered by Monsieur Teutsch in the Reichstag on the 18th February, 1874. The leading features of it will be gathered from the remarks made earlier in this notice.

Messrs. Winterer and Guerber, the Deputies for Altkirch-Thann and for Guebwiller respectively, had intended to address the Reichstag on the motion, but the President refused to call upon them to speak, telling them that three Deputies had moved the Closure. In accordance with the Standing Orders, the Closure was put to the vote and carried. Monsieur Teutsch being, thereupon, asked if he had anything to say, replied: "It has pleased the Reichstag to closure the debate. We appeal to the Almighty and to the judgment of Europe." He was thereupon cried down by Baron Nordeck von Rabenau, the most rabid of the Junker Deputies.

The motion of the Deputies for Alsace-Lorraine was next put to the vote and rejected by an enormous majority; the signatories thereto abstained from voting, in order to mark their disgust at the contemptuous reception they had met with in the Reichstag, and walked out of the building.

The fifth chapter deals with the proceedings in the French Chamber of Deputies and in the Senate on the 5th June, 1917, in connection with

the interpellation of the Government on its attitude towards the delegates wishing to attend the Stockholm Conference.

In the motion brought before the Chamber of Deputies by MM. Charles Dumonout, Klotz and 65 of their colleagues on this occasion, it was clearly indicated that the question of the restitution of Alsace-Lorraine to France and reparation for the damage done were the War aims which occupied the foremost place in the minds of Frenchmen. This motion was carried by an overwhelming majority amid cries of "Vive la France!" (467 votes for, and 52 against).

The Senate being consulted in its turn on the subject of the Stockholm Conference also passed a resolution; in it the intention was expressed to prosecute the War until such time that the restitution of Alsace and Lorraine could be assured, reparation secured for damage done and guarantees against German militarism obtained. The Premier repeated in the Senate the following statement which he had made earlier in the day in the Chamber of Deputies: "We have wished to remove out of the way all that was equivocal, everything in the nature of a pitfall in the formulas, the birthplace of which though stated to be Petrograd is really situated elsewhere. What is the meaning of this formula, seductive in appearance, whereby a war is to be concluded *without annexations, without indemnities*? Its origin is too apparent, and very simple-minded must be those persons who can allow themselves to be taken in by such formulas!"

"We have said: no annexations. Does that mean that we are not to have the right to demand the restitution to us of that which is ours, of this Alsace-Lorraine which had not ceased to be French before the War, during those five and forty years of suffering and grief through which we have lived since that criminal act, since that abuse of force which is one of the causes of the present War, an abuse of force which was responsible for the uneasiness that prevailed throughout the entire civilized universe owing to the outrage committed with comparative impunity against right and justice in 1871?"

"There is not a Frenchman, I dare to say, who would accept the proposition or who would dare to admit were he in a position to accept it, that we are not to continue the War for the purpose of regaining that which is flesh of our flesh, blood of our blood, those Provinces which have been torn from us and which will merely be returned to their Motherland! . . . This is what I have said in the Chamber, and this it is that has been received with approbation, by an enormous majority, in that Assembly. The views we have recorded in the motion before you, contain sentiments similar to those which will be found in the note which President Wilson has just addressed to Petrograd. We are in agreement with his high-minded and clear conceptions on the subject. He has himself said: 'Yes, no annexations, no striving after conquests.' But the restitution of Alsace-Lorraine would not, in the minds of the people of the United States of America, be held to fall in the category of conquests; similarly, reparation for damage done would equally be a simple act of justice only. We are then in complete agreement, I can say, with the views held throughout the civilized world. That fact, Gentlemen, constitutes a very powerful force, the value of

which ought to be appreciated by us, which ought to be borne in mind by us, since by the side of the *material force*, there exists a *moral force*. In this conflict, we have been sustained by the force of the *conscience universelle*, the resultant of all perfect co-existent moral forces, these now surround us and plead for us."

The motion brought before the Senate by the Government was carried *nemine dissente*.

Monsieur Viviani, Minister for Justice, on the invitation of the French Premier, addressed the Chamber of Deputies on this occasion on the subject of his recent visit to the United States of America. He described to his audience the warmth of the reception he had met with there.

Later on the same day, he repeated in the Senate, the substance of the account he had given to the Chamber of Deputies of his experiences in the United States of America and explained that the citizens of the great American Republic were heartily in sympathy with the views of all those who desired the restoration of Alsace-Lorraine to France.

The sixth chapter contains the text of the speech made by Monsieur Ribot on the 4th July, 1917, at the American banquet held at Paris on that day. In the course of his speech Monsieur Ribot referred to the question of Alsace-Lorraine and stated that the United States of America was fully aware that no sophism would prevent France from pushing her claims with regard to the restoration of the two Provinces taken from her by an abuse of force and that there was no need for a consultation of any kind in order to revive her title to these territories. He concluded his speech by referring to the solidarity of all free peoples and the admiration in which the United States of America were held in France and continued: "Let us lift up our hearts to the level of the events which are in process of accomplishment. Have faith in justice, in our courage, in our determination to continue the conflict until such time as we obtain not a humiliating peace worse even than death itself, but a peace which holds every right in respect."

Needless to say that this declaration was received with intense enthusiasm.

The seventh chapter deals with the proceedings in the French Chamber of Deputies in connection with the spoliation of the property in Alsace-Lorraine belonging to Frenchmen and those of French sympathies. Monsieur André Honnorat in addressing the Chamber on this subject stated that Monsieur Lazare Weiller had already brought forward a motion inviting the Government to take the necessary steps:—

1. To put a stop, in concert with the Allies of France, to the spoliation taking place of the properties of Alsatians and Lorrainers, who had come to or had remained in France.
2. To remove all suspicion and doubt concerning those Alsatians and Lorrainers whose loyalty to France was beyond question, but who were nevertheless exposed to annoyances owing to the Teutonic accent of their voices and the Teutonic ring in their names.
3. To inspire confidence as regards the future in the minds of Alsatians and Lorrainers who had, whilst remaining in the annexed provinces, continued loyal to France.

Monsieur Honnorat explained that the French "*Commission des affaires extérieures*" had recommended that the two last clauses of the motion given above should be eliminated. He reminded his audience that the drafts of two laws, dealing with questions relating to change of surnames, were at that time undergoing scrutiny by the *Commission de législation civile et criminelle*. He pointed out that the *Commission des affaires extérieures* desired the Chamber of Deputies to give legislative effect to the first of the above clauses. No new principles were involved therein. It was merely a question of inviting the Government to adopt measures jointly with France's Allies, in order to ensure that the Germans should no longer despoil private property with impunity.

Whilst the measures adopted in France in respect of enemy property have aimed at conservation, the tendency of the action taken by Germany in respect of enemy property has been directly the opposite. Monsieur Honnorat referred in his speech to some of the measures adopted by the German Government for dealing with enemy property and it is evident that, as in other matters connected with the War so also in this, the German authorities have shown a cynical disregard of all recognized conventions on the subject. So much so has this been the case that in certain sections of the Teutonic Press a note of warning has been sounded lest the conduct of the German authorities may result to a resort to reprisals on the part of the Entente Allies. Now that the United States of America has come in on the side of the Western Allies, the German Press fully realizes that should the Entente Powers apply the same principles, as those adopted by the German Government, in dealing with enemy property German interests throughout the world will suffer a blow of so serious a nature that it will take many generations to recover therefrom.

On the 26th May, 1917, the French Government lodged, through the Spanish Ambassador at Berlin, a solemn protest at the Wilhelmstrasse against the measures taken in regard to enemy property by the German Government. It has also considered the question of adopting reprisals.

The eighth chapter contains the text of the speech made in the Chamber of Deputies by Monsieur Lazare Weiller, Deputy for the Charente, and Monsieur Ribot's reply thereto.

On this occasion Monsieur Weiller addressed the Chamber of Deputies on the motion he had tabled inviting the Government to adopt measures for the prevention of the spoliation of the property of Alsatians and Lorrainers who had remained in or had come into France. In a moving speech he touched upon the course of events which had taken place since that memorable day—17th February, 1871—when Emile Keller had lodged with the National Assembly, at Bordeaux, the solemn protest of Alsace-Lorraine against the steps then contemplated of permitting their subjection to a foreign yoke. Monsieur Weiller, at the same time, made a powerful appeal to the Chamber to accept the motion standing in his name.

Monsieur Ribot made a short speech accepting the motion and informed the Chamber that its acceptance would strengthen and increase the authority of the Government. He denounced as intolerable the conduct

of Germany in dealing with the property of private individuals as it had done, conduct which had caused indignation throughout the civilized world.

On the conclusion of Monsieur Ribot's speech, the first clause of the motion referred to earlier in the notice (Chapter VII.) was put to the Chamber and carried *nem. con.*

The ninth chapter gives a short account of the meeting held at the Aeolian Hall, New York, on the 14th July, 1917, under the Presidency of Mr. Myron T. Herrick, an ex-Ambassador, to discuss the Alsace-Lorraine question. On this occasion Monsieur D. Blumenthal, ex-Mayor of Colmar and ex-Deputy of the Reichstag, explained the Alsace-Lorraine situation to his audience. He was followed by Father Clifford, the well-known Roman Catholic Professor at the Columbia University; Bishop Darlington, of the Methodist Church of Pennsylvania; Rabbi Wise, of the great Synagogue of New York, who, each in their turn, supported the cause of Alsace-Lorraine and France in eloquent speeches. The free peoples of the world were called upon to enter into a solemn obligation on that fourteenth day of July that they would not cease in their efforts until Alsace-Lorraine had been taken from the "blood-stained hands of Prussia in order to be restored into the wounded arms of France."

The tenth chapter contains a copy, in French, of Mr. T. P. O'Connor's article, dealing with the Alsace-Lorraine question, published in the *Daily Chronicle* for 8th June, 1917, and also a brief reference to the official dinner given by the Alsatians and Lorrainers of London to Monsieur Helmer; Mr. T. P. O'Connor was in the chair on this occasion.

In the *Daily Chronicle* article Mr. O'Connor expresses the opinion that Great Britain was guilty of a crime in deserting the cause of Alsace-Lorraine in 1871 and urges that this country shall not offend again. He describes the heroic struggle of the two Provinces to regain their liberty and considers it a matter for regret that the real history of Alsace is so little known. The measures adopted by Germany to extirpate French sentiment in the two Provinces are briefly touched upon. However, in spite of every effort at repression the French language survives in Alsace-Lorraine, a fact which indicates the tenor of the thoughts of its inhabitants.

On the occasion of the dinner Mr. O'Connor raised a note of warning against the proposal which has been discussed that, whilst Lorraine should be returned to France, Germany might be allowed to retain Alsace. He explained that no greater injustice could be done to the latter than to accept this solution of the difficulty. Alsace, he said, is "as much French as Lorraine, and intends to remain so after a half century of oppression. She hates the Germans."

The tenth chapter contains extracts from the notes made by Monsieur Welschinger, in his capacity of custodian of the records of the National Assembly in connection with the incidents of the 1st March, 1871.

The sitting of the Assembly on this occasion held at the Grand Theatre, Bordeaux, was a very noisy one. Bamberger, Deputy for Metz, made

an attack on the Empire ; Conti, a former Secretary to Napoleon III., attempted to defend the Empire. This was the signal for an uproar, the terrible storm broke. Conti was thrown from the Tribune, hooted at and hustled. Victor Hugo attempted to protect him ; the President of the Assembly called the members to order by ringing his bell and by word of mouth, but to no purpose. At 2.50 p.m., the sitting had to be suspended. Members ran about in the passages and in the adjacent rooms ; the excitement was intense. Finally, about half an hour later the sitting of the Assembly was resumed, an agreement had meanwhile been arrived at with regard to the wording of the motion in which the Fall of the Empire was about to be announced. The motion in question was thereupon read by Monsieur Target ; an impressive silence prevailed. The Empire was held responsible for the invasion, ruin and dismemberment of France. The motion was put to the Assembly and carried, six votes only being cast against it. Monsieur Thiers then addressed the members present and told them that Providence had wished to chastise the Empire for having permitted a War to break out whilst France was unprepared and without Allies. " This is the judgment of the Nation ; it will," said he, " also be the judgment of posterity." He then urged his colleagues to vote the peace preliminaries. Monsieur Keller for the last time entered his protest against the " cursed peace," which was soon to wring the hearts of so many devoted sons of France. Voting then took place on the motion with the following result :—For, 546 ; against, 102 ; abstentions, 22. A tense silence ensued in the hall. Monsieur Grosjean then read, in the name of his colleagues from Alsace-Lorraine, a touching and final protest and withdrew. The hall emptied and the public began to discuss the situation in the Place du Théâtre outside.

The draft of the Treaty and other necessary documents were despatched to Monsieur Jules Faures at Paris by train the same evening, in order to be placed without delay into Bismarck's hands, and at the same time, to ensure that the entry of Prussian soldiers into Paris should be immediately suspended.

The twelfth chapter contains the text of the statement made by Monsieur A. Ribot in the Chamber of Deputies on the 31st July, 1917. In an introductory note, attention is called to the interview Herr Michaëlis gave to the representatives of the German Press at the Wilhelmstrasse on the 28th July, 1917, when, in dealing with the recent speeches of Mr. Lloyd George and of Sir E. Carson, he told them that Great Britain did not desire a " peace by understanding," but one which would involve the complete submission of Germany. Michaëlis stated that France's schemes of conquest were known to him, and also what had taken place at the secret session of the Chamber of Deputies on the 1st June, 1917.

These schemes were intended, he said, to secure to France her former frontier as it stood in 1870, together with the basin of the Sarre and a big slice of territory on the left bank of the Rhine. Michaëlis also stated that Terestchenko, the new Russian Foreign Minister, had protested against France's War aims, which included the conquest of

Syria, and had threatened that the Republic of Russia would no longer participate in the War unless France renounced her ambitions.

It is not difficult to see through the Chancellor's cunning manœuvre. He wished it to be understood that Germany was willing to renounce her policy of annexations, but found herself awkwardly placed by reason of the schemes of conquest of her adversary. Further, he no doubt wished to bring about a deep cleavage between France and Russia, and lastly, he hoped that the world at large would place the responsibility for the continuance of the War on the shoulders of the Entente Allies. Several of the German newspapers followed the cue that had been given them. We have here again further evidence of Teutonic bad faith, *natum mendacio genus*, for the French Chamber of Deputies had on the 5th June, 1917, whilst mentioning the restitution of Alsace-Lorraine and reparation for the damage done by the enemy, definitely abandoned all schemes of conquest which it might have cherished prior to that date. It is to the remarks made by Michaëlis at the Press interview that Monsieur Ribot addressed himself on the 31st July, 1917.

The German Chancellor, he said, has publicly asked the French Government to state whether it had not, on the occasion of the secret session of 1st June last, informed the Chamber of Deputies that a secret Treaty had been concluded on the eve of the Russian Revolution, wherein the Czar Nicholas had agreed to support French claims to German territory on the left bank of the Rhine.

Monsieur Ribot characterized the version given by the Chancellor of the proceedings in the Chamber as grossly inexact and most untruthful. He informed the Deputies that they were fully aware of what had been said on that occasion. True, the Czar had been asked to support France's claim to the restoration of Alsace-Lorraine, but no question of further annexations of territory on the left bank of the Rhine had been raised. What had been proposed was that an autonomous State should be created on the left bank of the Rhine as a "buffer" between France and Germany. The Chancellor had falsified the sense of the letters exchanged, in February, 1917, between Paris and Petrograd, much as had his most illustrious predecessor done in the case of the Ems despatch. Monsieur Ribot declared his readiness to publish the correspondence in question, should the Russian Government agree to the adoption of this course; he further charged Herr Michaëlis with having deliberately suppressed the information concerning that part of the policy of the French Government which repudiated conquest of territory.

The statement made by Monsieur Ribot was accepted with unanimity by the Chamber of Deputies; as it contained the truth, the whole truth and nothing but the truth, no one rose to continue the debate.

The appendices contain :—

(1). An extract from an article published in the *Temps* for 19th July, 1917, dealing with the Alsace-Lorraine question; it is accompanied by the text of a letter, signed by Louis Blanc and his Republican colleagues, to the representatives of the Departments of the Bas-Rhin, of the Haut-Rhin, of the Moselle, of the Meurthe and of the Vosges; the signatories.

to the letter express therein their affection for the heroic people of Alsace-Lorraine, and make known their intention to repudiate the provisions of any act, treaty, vote or plebiscite which may cede the whole or any part whatsoever of Alsace and Lorraine to a foreign Power.

(2). The text of a letter dated Paris, 24th February, 1874, addressed by Monsieur Scheurer-Kestner to Monsieur E. Teutsch, just after the latter had raised his protest in the Reichstag.

(3). An article dealing with the attitude of the French Socialist Party towards the Alsace-Lorraine question.

The text of the resolution passed at the Socialist Congress in December, 1915, is given in this Appendix. In the resolution referred to, it is definitely stated that there can be *no durable peace* until the bond between France and Alsace-Lorraine, which the brutality of force had alone severed in 1871, in spite of the protests of the Socialists Bebel and Liebknecht made in the bosom of the German nation itself, is re-established.

And it is further stated in this document that the Socialists of France considered the Alsace-Lorraine problem one requiring solution by reason of the acceptance by them of the doctrine that peoples alone possess the right to dispose of themselves.

The Socialist Party further recall the fact that Alsace and Lorraine voluntarily passed under the sway of France in 1790 and that these Provinces raised a solemn protest in 1871 against their annexation by Germany.

The political history of the two Provinces since the annexation is briefly traced and it is conclusively shown that the sentiments of Alsatians and Lorrainers remain to-day the same as those entertained by their ancestors of 1790. France is not seeking any *annexations* in demanding the restitution of those Provinces, she is simply claiming that effect be given to the *wishes of Alsatians and Lorrainers so repeatedly expressed by them*.

Extracts are given in this Appendix from an article which appeared in the *Temps* for 11th August, 1917, dealing with the reply of the Committee of the United Socialist Party prepared for the Stockholm Conference on the question of the restitution of Alsace-Lorraine to France. In this reply, the French Socialists admit the incontestable right of France to the two Provinces, but they proceed to demand that France shall, in order to provide an illustrious example of the principle that the choice of the flag under which peoples shall live is one for their own free decision, renounce her just claims in order to spare the world from calamities without end.

The *Temps* points out that the proposal of the Socialists amounts really to a demand that France shall be wilfully guilty of a failure in her duty to Alsatians and Lorrainers and that she shall betray the confidence which her unhappy children have not ceased to place in her for six and forty years. France is called upon thus to disown her past and to ignore the moral value of the solemn obligation sealed at Bordeaux by the representatives of the sacrificed peoples at one of the most tragic hours in their history.

The *Temps* considers that the prudence of the terms and the perfidy of the arguments used by the French Socialists in no way attenuate the abominable character of the decision arrived at by them.

(4). The text of a letter dated 15th August, 1917, addressed to the French Socialist Party by the *Légions des anciens officiers, sous officiers et soldats*, in which they record their strong protest against the adoption of the course recommended by the former.

(5). The text of a declaration by the *Sociétés alsaciennes-lorraines* dated 15th August, 1917. The history of the two Provinces is briefly traced from 1552. It is pointed out that 400,000 inhabitants of Alsace-Lorraine have preferred to quit their native land, during the period 1871—1914, rather than submit to the brutality of their conquerors; that they have continued to reiterate their protests against their annexation; that they have continued faithful to the French language as the vehicle for communicating their thoughts; and that they have persistently refused to recognize alleged rights claimed by their invaders. As time has passed by their repugnance to their Teutonic rulers has increased, and just before the outbreak of the present conflict the governing authorities of Germany had openly to admit that their scheme for germanizing the two Provinces had failed hopelessly. In their declaration the *Sociétés alsaciennes-lorraines* reiterate their demand that the two Provinces shall be allowed their *droit imprescriptible* to choose the flag under which they shall live.

No one can read the volume under review without being deeply impressed with the great importance attached, not only by France but also by Alsace-Lorraine, to a restoration of the relationship existing between them prior to the Treaty of Frankfort.

W. A. J. O'MEARA.

HAND GRENADES.

A HANDBOOK ON RIFLE AND HAND GRENADES.

Compiled and Illustrated by MAJOR GRAHAM M. AINSLIE.—(John Wiley & Sons, Inc., New York ; Chapman & Hall, Ltd., London).

This book, which is the result of practical experience in the present war, should prove of value and interest to those who wish to extend their knowledge of the subject from acquaintance with a few types of grenade to an accurate, and, as far as may be got from the printed word, an intimate knowledge of many types ; which, indeed, is its purpose.

Twenty-three grenades, British, French, and German, are illustrated, and more are described. The descriptions given are full and practical : they include type, time of burning of fuze, weight, explosive, safety device, body, striker, igniter, preparation for use, and method of using. In the descriptions of German grenades the following information—important to the unskilled grenadier—is given :—

1. How to make the grenade safe.
2. How to make the grenade alive.
3. How to use the grenade against the enemy.

A list of explosives used in grenades is given, and descriptions of service Fuzes, Detonators, Exploders, and Lighters are included, and the correct manner in which to throw a hand grenade is described.

The constructional details having been given, the practical application of grenades in warfare is not forgotten ; and several pages of the book are devoted to a description of the duties of the individuals composing a Grenade Squad, and the method of Clearing a Trench from a Flank, and a Frontal Attack in Conjunction with Infantry.

J. D. B.

NOTICES OF MAGAZINES.

REVUE MILITAIRE SUISSE.

No. II.—November, 1917.

FEATURES OF THE BELGIAN FRONT.

What the Belgian Army has done since the Battle of the Yser.

Major Willy Breton, of the Belgian Army, has prepared an article on the Belgian Front; the first part of it appears in the number of the *Revue* under notice; twelve photographic reproductions, giving views of various defence works constructed on this front, accompany the text. The early experiences of the Belgian Army in the present War are recited as an introduction and we can thus follow the vicissitudes of this army from the time of the heroic defence of the frontier fortresses of Liège and Namur; we are successively reminded of the retreat from the Meuse defences, of the brilliant little victory of Haelen, of the retreat from the Gette into Antwerp, of the bombardment of Belgium's great keep, of the sorties therefrom, and finally, of the escape of the remnants of the Belgian Army from Antwerp and of its eventual arrival on the Yser.

Major Breton reminds us that the line of the Yser was not chosen arbitrarily as a rallying ground for the Belgian Army, but because, at the time in question, it was the nearest natural defensive position in which, when reached, this army would be able to link up with the French and British forces, themselves gradually gliding northward, during the "Race for the Sea." It was on this line that the Belgian Army "in rags" and with its effective strength reduced to 80,000 men, viz., 48,000 rifles and 350 guns, helped to keep at bay, during the last fortnight of October, 1914, a German Army of 150,000 men, consisting for the greater part of fresh troops and supported by 500 guns. For the first eight days, the only reinforcements that came to the assistance of the Belgians were some 6,000 French Fusilier Marines; from the 23rd October, 1914, it had also the support of parts of Grossetti's Division.

On the 31st *idem* the Germans were driven from Ramskapelle, and the inundations caused by the opening of the sluice gates by the Belgians about this time virtually brought the Battle of the Yser to an end. The roads to Dunkirk and Calais were now finally barred to the enemy, but, in the meantime, the Belgian Army on the Yser had suffered enormous losses. The casualties amounted to 11,000 killed and missing and 9,000 wounded; and in addition 5,000 men were *hors de combat* owing to sickness. These casualties reduced the strength of the infantry

to 32,000 rifles; and it was to these men that was confided the honour and duty of continuing the struggle in order to prevent the last vestige of the soil of their Fatherland falling into the invader's hands. For three long years they have held tenaciously on to the front allotted to them, a front which has gradually been extended since the Battle of the Yser. Circumstances have not permitted the Belgian Army to take part in any great "push," but it has come in for its share of defensive warfare, particularly in connection with the German offensive against Steenstraat (April and May, 1915), when the Kaiser's troops were, in spite of the surprise produced by the first use of gas, successfully held up. The main task of the Belgian Army has consisted in strengthening their defences, so as to make their portion of the front, as far as possible, impregnable. The defences constructed by Belgian soldiers in the inundated regions form a model of what strong works should be; not only have these soldiers given a great example of endurance, stoicism and patient application, but they have, at the same time, displayed very considerable ingenuity in dealing with difficult problems in an inhospitable and unpromising region. Their labour and brains have brought into existence an immense fortress covering many square miles of territory.

The Front allotted to the Belgians. The Objects to be Attained. General Conditions prevailing on the Front in Question.

Having failed to reach Calais by breaking through the Belgian front, the Germans next expended their efforts by hammering at the Ypres salient; there also they met with a check. At the time that the operations last referred to were in progress, the Germans simultaneously made a further attempt to cross the Yser and renewed their attacks against the bridgehead at Dixmude, no doubt with the object of retaining as large a part of the Entente troops as possible on the Belgian coast. On the 10th November, 1914, the French and Belgian troops had to give ground and retired to the left bank of the Yser; the ruins of Dixmude thereupon passed into German hands. However, all German attempts to cross the river were frustrated and, after having suffered heavy casualties, the invaders eventually desisted in their attacks in this region.

Winter brought operations practically to a standstill; both sides were now fairly exhausted and set to work to recuperate, and to strengthen their defensive arrangements. But taking advantage of their superiority in artillery on the front held by the Belgian troops, the Germans continued their efforts to destroy and to demolish the Yser defences and to reduce to ruins the villages used for billeting the Belgian troops. One by one the villages in question were reduced to shapeless masses of bricks, stones and dust.

It is in this ruined region that the Belgian Army, reorganized after its trying experiences, was at work, during the bitterly cold days of the winter of 1914, in raising the solid ramparts against which the enemy has been knocking and wearing itself out in vain since those early days of the War.

The front originally held by the Belgians stretched from Nieuport to the old fort of Knoeke, at the confluence of the Yser and of the

Yperlee. It was later extended first to a point just N. of Steenstraat and then to Boesinghe. Finally, a front of about 20 miles was assigned to the reconstituted Belgian Army. In view of the relatively weak numbers available, the Belgian soldiers have had a very strenuous time; although the inundations, which covered a great part of the Belgian front, hindered the enemy, for a time, from making serious attacks on the Yser line, nevertheless, at other times, the ice in the inundated region rendered the protection of the waters illusory. Great labour and skill have also been involved in controlling these waters, so that whilst the enemy might be caused to suffer the greatest inconvenience from the inundations, yet, at the same time, these waters should be prevented from invading the Belgian trench system to such an extent as to render the latter untenable.

Major Breton points out that it is a mistaken idea to assume that the inundations form an impassable obstacle. The roads, the small humps in the ground and the farms constitute causeways and islands which all offer advantages to an attacking enemy. Thus it is that, from the earliest days, Belgians and Germans have been disputing for the possession of the several points of vantage in order to hold them as advance posts for the purpose of covering their respective main lines of defence.

The ground about Dixmude being above the water level, the Belgian and German defences were brought close up together in this locality and were separated alone by the width of the Yser, some 15 to 20 yards only. For this reason exceptionally strong works had to be provided by the Belgians in this neighbourhood. Similarly, owing to the fact that the Belgians naturally wished to keep the sluices at Nieuport in their hands, they set to work to construct a formidable bridgehead at the place last mentioned, and have rendered it, as far as possible, proof against all attacks.

South of Dixmude, the Belgian and German defences were actually on the banks of the river opposite one another, except where the inundations caused them to be separated to a greater extent.

The defence arrangements of the Belgians had the following twofold objects in view:—

(i.). To make the left wing of the Allied front in the Western Theatre as secure as possible; thus to bar the approaches to Dunkirk and Calais.

(ii.). To retain a hold on Belgian soil; a matter of political as well as of military importance.

It is the importance of the duties allotted to the Belgian Army that accounts for the fact that the *moral* of its soldiers has been maintained at a high standard and that privations have been suffered by them without any complaining on their part.

Major Breton deals in some detail with the organization of a Belgian defensive sector. He reminds us that the power of modern artillery and of high explosives render it necessary to organize defence arrangements in a *zone which has considerable depth*, so that there may be *several successive positions*. Further, each position should consist of a series of defensive lines a short distance apart and should be provided with

all the necessary accessories. The weaker a position is naturally, the more elaborate must be the works provided for its defence.

The Belgian defence works nearest to the enemy are as a rule continuous; farms, woods, villages, etc., in these positions being converted into *points d'appui* in the general line. Communication trenches, providing complete cover from view, connect the various portions of the several positions and their successive lines together. Numerous bombproof shelters have been constructed so as to provide cover during bombardments and also for use as sleeping accommodation in inclement weather. Particular attention has been paid to the provision of emplacements for machine guns, for trench mortars, and for mine-throwers. A considerable amount of trench railways have been laid and an immense telegraphic and telephonic network has been installed throughout the defensive zone.

All who have had anything to do with that part of the Franco-Belgian frontier region between the sea and the Yser, known locally as the "Veurne-Ambacht," are aware of the peculiar difficulties involved in providing for its defence. It took centuries to reclaim the wastes in this region. To provide for the flooding of these pasture lands during the winter and for their subsequent drainage in the spring, the fields are surrounded by irrigation channels, known locally as "Vaarten" or "Grachten," 10 to 13 ft. wide. The only place of importance in this region, apart from Nieupoort and Dixmude, was Furnes.

The "Veurne-Ambacht" is very poorly provided with communications. The only railway in this district, apart from the one connecting Nieupoort and Dixmude and the few unimportant light railways, is the single track line connecting Dixmude and Furnes with Dunkirk and this is without any platforms or sidings. Roads are equally scarce in this region; the only first-class ones being those connecting Nieupoort and Loo *viâ* Ramskapelle and Oudecapelle and the main road from Furnes to Ypres.

Owing to the very open nature of the country, it has been possible for the Germans to keep themselves fully informed as regards the defences constructed by the Belgians.

General Description of the Works Constructed.

The impossibility of digging to any depth below the surface of the ground on the Yser front accounts for the special features of the defences constructed by the Belgians. In place of the deep and narrow trenches, provided on the British and French fronts, with which the technical literature of the War has made us familiar, there abound on the Yser line great ramparts constructed above the ordinary level of the ground out of material which has had to be transported to the sites of these works at great labour and risk. It is behind these *ramparts*, erroneously spoken of as *trenches*, that the Belgian soldiers keep watch and ward. Many thousands of sandbags, barrels of cement, rails, logs of timber, etc., have been used in the construction of the works in question and a very good idea of the character of these defences can be obtained by an inspection of the photographic reproductions which accompany the text of the original article. It required many weeks to complete these works; indeed, it was not till after the Battle of the Yser had ter-

minated that they acquired their present strength, and it was not till then that the Belgians devoted themselves to the improvement of their communications, by the construction of new roads and light railways, in this region.

(a). *Control of the Inundations.*—At the time that the Germans crossed the river at St. George, at Schoorbakke, at Tervaele and near Oud-Stuyvekenskerke, it was not straightway possible to regulate the inundations so as to inconvenience the enemy alone; in consequence, the water invaded the Belgian *trenches*. It therefore became necessary, without delay, to put in hand works for the purpose of regulating the flow of water. Very great technical difficulties were successfully overcome by the Belgian Engineers in dealing with this problem and finally it became possible to flood the *enemy* zone, without allowing water to enter, simultaneously, the *friendly* zone. Naturally, steps had, at the same time, to be taken to prevent the Germans lowering the level of the water in the *enemy* zone and also to render it impossible for them to flood the *friendly* zone. Barrages, many kilometres in extent, have been constructed; they are of two kinds, viz., *fixed* and *movable*.

(b). *Trenches.*—The defences on the Yser had to be constructed at night. The working parties had, in consequence, trying times in marching to and from the localities where they were employed owing to the wet and sticky mud and to the existence of shell-holes on the narrow routes which had to be followed. Considerable precautions had to be taken so that the enemy should have no inkling as to the parts of the Belgian front on which work was actually in progress. Engineer Parks were established at various points and from these points the materials and tools had to be carried to the site of the works by the working parties, which often incurred casualties, since the enemy used to light up the ground by parachute flares and then to turn machine guns on to the ground lit up by them. The trench system on the Yser front has an extent of 249 miles and it is estimated that over $4\frac{1}{2}$ million yards cube of earth has had to be transported for its construction.

Many miles of bridges have also had to be constructed over the inundations separating the several parts of the Belgian trench system; a view of one of these bridges is reproduced in the *Revue*.

INDIVIDUAL INSTRUCTION OF THE BRITISH SOLDIER.

It is stated that extracts from an article entitled *Une école d'infanterie britannique en France*, by Lieut. Bédier, of the 338th Infantry (published in the *Correspondant* for 25th February, 1917), have been distributed in pamphlet form to Swiss officers. The study of the contents of this pamphlet is strongly recommended. It is said that the British, being a practical people, have arranged for the instruction of their soldiers, after three years' experience of War, on lines providing for that which is necessary and essential alone to be taught, whilst that which is unnecessary and unessential has been rigorously excluded from the training programme. The programme of instruction, it is stated, contains much that is of interest to the Swiss Army, which still retains many obsolete customs and ancient usages which require to be revised and in some cases abandoned.

MEDICINE AND SURGERY IN WAR.

The author of the original article is of opinion that soldiers, from the general to the private soldier, do not, at the present time, attach to matters affecting medicine and surgery the importance that is their due. It is urged that the attention of the Higher Command should not be directed exclusively to plans for the destruction of the enemy's Army, but should also concern itself with measures for imposing the will of the country on an enemy at the termination of a conflict.

A campaign is futile which comes to an end simply by reason of the drain on combatants exhausting the man-power of a nation. Briefly, the following should be the aims of a commander in the field :—

(a). To destroy as much of the enemy's war material (*e.g.* rifles, guns, supplies, munition factories, etc.) as possible.

(b). To kill or neutralize as large a part as possible of the combatants of a hostile army.

(c). To maintain at the highest state of efficiency the weapons and tools in the hands of one's own soldiers ; to increase the same and to improve their value by manufacture, adaptation, purchase.

(d). To protect, tend, recuperate the *personnel* of the fighting forces, of the reserve, and of the auxiliaries (*e.g.* military non-combatants, munition workers, etc.).

It is in respect of the last mentioned of the above duties that responsibility almost wholly properly belongs to the medical services.

Every collective social act should be systematized ; all general acts tending towards a single end should be co-ordinated. Hitherto, army surgeons have been inclined to direct their efforts in a too individualistic manner. Practical experience has taught the Allies, from a long experience of War, the value of co-ordination in the work of destroying the enemy's forces. They can but wish to have uniformity and co-operation in the work of conserving, protecting and recuperating their own forces.

During the past three years an immense amount of medical and surgical experimental work has been carried out on all fronts ; experimental work of very great value to the medical profession. It is desirable to bring together all the knowledge thus obtained, to compare, to examine, to analyze the same with a view to separating out those parts which may, so to say, contain universal laws. Every doctor, every surgeon, or at least every school, has methods and processes of its own, someone among each of these must, it is thought, be the best and should therefore be generally adopted.

The question of the precautions to be taken to prevent the infection of wounds is discussed in the original article. It is suggested that at the advanced dressing stations such treatment only should be accorded the patient as will provide against his wounds from coming into contact with foreign bodies ; the patient should then as soon as possible be removed to a Clearing Centre. It is at the Clearing Centre that the treatment of the wounds should first be fully taken in hand, the patient's blood examined, etc., and such measures adopted as the nature of the wounds and the condition of the patient justify.

The necessity for consultations in connection with injuries of various

kinds is urged; it is pointed out that it is in this way that the army doctors will be put in a position best to carry out their responsibilities in connection with the conservation of the efficiency of their own army; they will thus be able to help their country to impose the will of its people on the enemy.

NOTES AND NEWS.

International News.—The German Press, it is stated, has been trying to pick a quarrel with Switzerland. The quarrel has already passed through two phases. The first phase consisted in the *Lokal Anzeiger* alleging that Monsieur Ador, of the Federal Council, had, in stating that the peace of the future must be based on justice and right, been guilty of an offence amounting to a breach of neutrality and that he should therefore be called upon to resign. The Swiss people were at first surprised and later amused at this attack on one of the members of their Government. The Swiss Press took up the attitude that the choice of the Federal Council was a matter that concerned the Swiss people alone and was one in which foreigners had no right to dictate a course of action. Subsequently an official note was published stating that the article in the *Lokal Anzeiger* had not been inspired by the German Government; this explanation was accepted and the incident was allowed to drop.

The second phase followed quickly after. The Imperial Press next sought as a pretext for a quarrel the attitude of the Romande Swiss, which according to the German formula is hostile. This attack led to a long-drawn controversy. The German Press hoped to divide the Swiss people into two opposing camps, but this manoeuvre failed.

Dealing with the recent Austro-German offensive against Venetia, the opinion is expressed that in spite of the serious mistakes of the Entente Powers in connection with the Italian campaign, it is hardly likely that the Central European Powers will obtain any decisive political results out of their temporary success. It is felt, however, that under the present circumstances the Austro-Germans may consider it worth while to violate the neutrality of Switzerland. Switzerland continues strategically to cover the rear of the Italian Army; it played the same part in relation to the French Army during the operations on the Marne. Sad to say, Switzerland also protects the German left flank and it also protected the Austrian right flank during the Italian offensives in 1915 and 1916. Although the German Press has not been satisfied with the neutrality that the Swiss have continued to observe throughout many trying months, nevertheless the Swiss people have a clear conscience; they have faithfully and with scrupulous care carried out the international obligations imposed upon them by treaty.

The number of the *Revue* under notice concludes with bibliographical notices relating to works of military interest published recently; a list of works received for review is also published.

No. 12.—December, 1917.

EDITORIAL NOTE.

The Editors of the *Revue* point out that, in spite of the unpropitiousness of the times, the programme which they undertook to carry out

during 1917 has been faithfully followed by them ; one article promised, that on the naval aspect of War, has alone not been published and this omission has been due to the illness of the author.

Times are still hard and costs have gone up in every direction ; however, the Editors hope to overcome the obstacles in their way and trust that the high standard of their publication will be maintained during 1918.

It is pointed out that Switzerland is passing through a crisis, one which is of a twofold nature. On the one hand, there is the anti-militarist danger, the tendencies of which are of a distinctly anarchist order ; on the other hand, there is a schism in the ranks of Corps of Officers. Both these factors increase the difficulties which the Editors have to contend with at the present time. It is proposed, as during the year 1917, to devote particular attention in the issues of 1918 to matters of interest connected with the Great War.

FEATURES OF THE BELGIAN FRONT.

Work done by the Belgian Army since the Battle of the Yser.

(c). *Works of a Technical Order.*

The article by Major Willy Breton, of the Belgian Army, dealing with the defence works on the Belgian front, begun in the November number of *Revue* (*vide* page 186 of this issue of the *Journal*) is continued and concluded in the number under notice. A map of the region occupied by the Belgian Army accompanies the text of the original which is illustrated by six photographic reproductions. Major Breton points out that the greater part of the defence works dealt with in his previous article were executed almost entirely by infantrymen, whilst the works of which he gives some account in the article under review are those which have had to be executed by technical troops, *e.g.*, by Engineer units, by sappers and miners, by bridging *personnel*, by telegraph troops, by railway troops, etc. The Belgian Field and Heavy Artillery have, as the number of their pieces increased, constructed their own gun emplacements and the accessories thereto.

Summarized accounts are given under seven heads of works of a special nature :—

1. *Shelters, Redoubts, Concreted Defence Works.*

2. *Communications.*—The region occupied by the Belgian Army was particularly destitute of railways. After the Battle of Flanders (October and November, 1914) the incessant movement of troops, hostile bombardments, and the inclement weather caused the roads in this region to become almost impassable. In order to facilitate the supply services, it became imperative to repair these roads, and to provide new railways. Special units were organized to deal with the communications ; they have constructed some 110 miles of railway of normal gauge, in addition to some hundreds of yards of trench railway.

The Belgian Engineers have constructed many miles of trestle bridging, hundreds of bridges and thousands of culverts. The roads fit for vehicular traffic newly made or remade by these troops have a total length of 250 miles, and the use of half a million tons of stone and a similar quantity of sand have been involved in their construction.

3. *Miscellaneous Works.*—In this category are placed works connected with the housing of troops and standings for animals.

In order that the targets for the enemy's artillery and aircraft should be as small and as inconspicuous as possible, the accommodation provided for the Belgian troops in the occupied area of Belgium has been split up into small units.

Among other things bombproof aid posts and operating rooms have been constructed in forward positions, whilst at the same time immense hospitals have been erected in the zone immediately removed from that in which actual fighting is in progress.

The demands of the Aviation Service for aerodromes, repair shops, etc., have been on a huge scale; these have all been satisfactorily met.

4. *Artificial Screens.*—The losses inflicted by the enemy on the Belgian troops were at one time very considerable owing to the almost complete absence of cover in the plains occupied by them. This has necessitated the provision of a very considerable amount of work, running into many thousands of square yards, in order to screen the troops from view.

5. *Water Supply.*—By a singular irony the Belgian soldier, whilst living in a region where he sees himself surrounded by water on every side, would have died of thirst or disease had not special arrangements been made to provide him with potable water. Very great precautions have had to be taken to prevent the drinking water obtained from the wells sunk in this region becoming contaminated; in some cases these wells have had to be sunk to a depth of some 400 ft., and more, to reach the strata bearing potable water.

6. *Telephone Network.*—Some idea of the magnitude of the work carried out in providing telephonic communication on the Belgian front can be gathered from the fact that the mileage of the conductors laid amounted in the summer of 1917 to 13,610 miles, whereof 4,100 miles consisted of buried wires.

Some 8,000 sets of telephone apparatus were in use in connection with this system.

7. *Artillery Emplacements.*—At the outbreak of War the Belgian Army was provided with but a limited number of field pieces (75-mm. guns) and about a couple of dozen 6 in. howitzers. After the Battle of the Yser great efforts were made to increase the artillery armament of the Belgian Army in numbers and in weight. By degrees a very imposing artillery force has been raised and armed, and this has entailed the construction of an enormous number of gun emplacements with concrete shelters for the *personnel*.

Conclusion.—Major Breton in conclusion points out that a mere letterpress description of the work carried out on the important route of advance of the German forces on Dunkirk and Calais can convey but a very inadequate idea of the immense labour entailed in constructing the same in a most inhospitable region. Moreover discretion has imposed a deep silence in relation to much of the work carried out on the Belgian front.

In spite of the fact that the Belgian Army has for many months now had to play a purely defensive rôle, the men still possess high spirits.

Neither the elapse of time nor their hard experiences have in any way tamed them; they are still filled with a burning desire to chase the invaders from the ravaged territories of their Fatherland.

THE ITALO-AUSTRIAN THEATRE OF OPERATIONS.

The article on the above subject begun in the number of the *Revue* for April, 1917 (*vide R.E. Journal* for August, 1917, *et seq.*), is continued in the number of the *Revue* under notice. A sketch map accompanies this contribution, which was prepared about the date that the Battle of Bainsizza took place. At that time the success of the slow but constant pressure of the Italian offensive promised to afford the Italian General Staff an opportunity to undertake further offensive operations under favourable conditions.

During the preliminary actions of 1915 the Italian Army may be said to have been studying, so to speak, modern war on the plains and in the mountains, to have been improving the training of its troops and to have been perfecting its equipment. The next phase, that of 1916, was that of the Austrian offensive in the Trentino, so rich in lessons, followed by the vigorous counter-attack on the Isonzo by the Italians, which gave the latter possession of this river line S.W. of Gorizia. In the autumn of the same year much activity prevailed in the Alps; first on the Pasubio, later on the Carso. During the spring of 1917, the Italians extended their activities into the region N. of Gorizia; the operations undertaken by them reached their culminating point in the capture of M. Cucco-Vodice and the attacks on the advanced positions of Hermada.

It is to this last-mentioned phase of the War that the article under review is devoted.

It was on the morning of the 19th August, 1917, that, after an intense bombardment, the Italians launched their attack, properly so called, between Plava and the sea, on a front of more than 37 miles. The *terrain* in this region is broken up by a series of obstacles; it is of a most difficult nature, mountains and rivers abound, roads are few, rocky masses are plentiful; and to the obstacles of nature had been added the most formidable artificial defence works of all kinds that the art of the Engineer was capable of devising. The difficulties in connection with the carrying out of an attack in such a region are too apparent to need any comment.

The features of the Bainsizza plateau consist in a combination of those of the Carso and of ordinary mountain regions. The Carso forms, so to speak, the southern bastion of the defences of Gorizia and M. San Gabriele its northern bastion; the latter at the same time serves as the boundary of the plateau and as an obstacle on the front Ternova-Chiapovna.

M. San Gabriele possesses the features of a supporting point capable of an all-round defence. From its culminating point (about 2,120 ft. above sea level) four spurs spread out fan-fashion, as follows:—

1. In S.E. direction, the spur from M. San Daniele to Zoerenz, parallel to the Ravnizza-Ternova road.
2. In S.W. direction, the spur from M. San Gabriele to Tivoli (E. of Gorizia).]

3. In N. direction, the spur from Veliki Hrib to Britof.

4. In N.E. direction, the spur towards Ravnizza.

Extensive defence works had been provided on each of these spurs by the Austrians on the latest approved models, and the approaches had been well covered by numberless machine guns disposed so as to bring the whole region under cross-fire.

The features of the northern part of the Bainsizza plateau are similar to those of the Carso. To the west of it flows the Isonzo, where the Austrians had entrenched themselves along the left bank of the river from Auzza to Britof, at a short distance from the Italian defences. The Austrian first line was covered by their defences on the rearward line Semmer-Verh-Cucco-711-Jelenik. A retrenched position had also been provided connecting the heights of Jelenik and Kobilek, the Austrian defences being completed by linking these up with the works about Madoni. To the east of the plateau lay the Vallone Dichiapovano, and to the north the Ayscek rivulet which flows into the Isonzo, W. of Auzza. Part of the defensive system between Plava and M. Santo had fallen into Italian hands during the May offensive.

The Italians had recognized that before undertaking an attack on M. Santo and M. San Gabriele, it was necessary for them to be masters of the Bainsizza plateau. The operations for which they made preparations were a sudden attack on the river line, the transfer of troops across it and finally an attack in a mountain region on a bastion, which had been provided with elaborate defences.

The crossing of the river N. of Anhovo by the Italians will ever remain a memorable event in the annals of military history; the restrained reference thereto in the official communiqué only tends to enhance the skill and valour of those who were responsible for planning and carrying it through.

Between Anhovo and Auzza the river flows in a deep ravine, as between walls. It had been crossed at Bodrez by the Bergsaglieri.

The Austrian defences were constructed along the river bank. In rear of the trenches, redoubts had been provided at intervals; communication trenches led therefrom to the river. The whole region was well swept by fire and at night the ground was illuminated by large numbers of searchlights.

The Italian artillery kept up a lively bombardment of the Austrian defences; meanwhile, during the night, bridging material was brought down to the river bank. The river having been bridged, the Italian infantry quickly crossed it and obtained a footing on the far bank. The first phase of the attack had therefore succeeded and the Italians were placed in a favourable position for their next offensive thrust. The Austrians put up a very good fight and inflicted serious casualties on the Italians on the front between Bodrez and Loga. S. of Bodrez, as at Anhovo, fortune favoured first one side and then the other. However, finally the river was bridged in 14 places and the Italian columns of attack on the left advanced towards the line Semmer-Fratta and those on the right towards Jelenik.

On the evening of 19th August, the issue was still in the balance; the Italians had not succeeded in seizing Jelenik. On the day following

the Italian attacks N. of Fratta attained their object. The Italian Artillery now increased the intensity of its fire in a N.E. direction and held up every Austrian counter-attack ; meanwhile the Italian columns marched southwards, reached the Verh plateau, shook the defences of Jelenik and isolated M. Santo, where the Austrians surrendered.

Finally, the whole of the Bainsizza plateau fell into Italian hands in consequence of the enveloping move made by the left wing of their 2nd Army. But to complete their success it was necessary that the Italian 3rd Army should co-operate actively further south ; this was done.

The capture of the plateau constituted a very important victory for the Italians ; it resulted in Tolmino being cut off from M. San Marco.

The 3rd Army very effectually supported the 2nd Army by the attacks it delivered in the region of Hermada and Gorizia. By hard fighting the Italians were able, by the 1st September, to straighten their line near Raccogliano, N. of Castagnevizza. On the south, the line was pushed beyond Selo and extended to Flondar. At the date last mentioned, the Italian advanced positions on the Bainsizza plateau lay on the line Mesniak-Kal summit—Voľnik—E. Zagarje-Salcano.

However, the Italian victory was by no means decisive, although the results gained were exceptionally important. The Austrians were no longer in a position to attack on the Carso and their right flank was exposed. They not only lost a valuable *point d'appui*, large quantities of stores and many men, but their *morale* was also considerably shaken.

Equilibrium could only be established on this front by the Austrians undertaking a counter offensive with all their *available forces*, since the Italians had acquired a position which put them at a great advantage.---
(*To be continued*).

DEATH OF COLONEL AUDEOD.

The Swiss Army has recently had to deplore the loss of Colonel Alfred Audeod, who succeeded to the command of the 1st Army in December, 1912. Colonel Audeod was born in 1853, and at first studied law. But, in 1876, he decided to adopt a military career and was commissioned as a Lieutenant in the 10th Battalion of Infantry. He joined the Staff in 1887 and, in 1908, was appointed to the command of the 1st Division. He was a frequent contributor to the pages of the *Revue Militaire Suisse*. Colonel Feyler in an obituary notice points out that the deceased officer possessed quite exceptional merit ; this was so fully recognized that nobody thought of entering into a discussion on the matter. The confidence in Colonel Audeod was as great in the ranks of the civil population as in the Army. Two circumstances were responsible for this state of affairs ; firstly, the profound knowledge he possessed of matters pertaining to his profession and the fact that he did not allow himself to be trammelled by formalism and matters of routine ; secondly, his personal qualities, which were such as to cause not only professional men, but even the man in the street to be interested in him. He displayed great tact in his dealings with civilians as well as with soldiers ; such is the explanation of the widespread nature of the regret caused by the death of Colonel A. Audeod.

NOTES AND NEWS.

Switzerland.—A question of considerable military interest is now before the Federal Chamber; a project is on foot to revise the Swiss Military Law of 1907, in order the better to secure the supremacy of the Civil Power over the Military Authorities. The principle involved is acknowledged to be sound; in the same way that strategic plans must be subordinated to the requirements of the political aims a government have in view, so a general and his staff must act in subordination to the political authority that has placed the national forces under them. But care should be taken, it is pointed out, not to push this doctrine of subordination of the military to the Civil Power to such extremes as to fetter the action of generals in the application of the technique of strategy. The contributor of these notes feels that another law, another text, another terminology are incapable by themselves alone of bringing about a change in matters of essential importance. Further, the nomination of honest men to the chief positions in an administration is not alone sufficient to ensure that things will work smoothly and well; it is also necessary (1) that these honest men shall possess above all things character and (2) and their characters must be such that compatibility shall be assured when problems requiring co-operative treatment are being dealt with.

Should the changes in the law which are contemplated bring about harmony, this will be a distinct gain. However, until experience has demonstrated the value of the proposed changes, those who possess a practical turn of mind rather than a nature easily hypnotized by sonorous sounding phrases are advised that they had better maintain their attitude of scepticism regarding the benefits likely to follow from the labours of the Swiss legislature.

Rumours are afloat that a reorganization of the Swiss Army is also in contemplation; reformers are anxious to apply the lessons of the present War. The hope is expressed that the measures that may be adopted will not show any leanings towards servile imitation of things foreign. The principle to be borne in mind in any reorganization can, it is suggested, be summed up in the words: "Adapt, but don't copy; mould the form on the spirit."

It is stated that whilst civilized peoples of many nationalities and many colours are fighting and sacrificing their lives on behalf of their Fatherland or that of others; striving after hegemony or after liberty; endeavouring to obtain or to retain worldly possessions; struggling to secure their material ambitions or their idealistic aspirations, the Swiss continue to discuss the subject of "drill," "correct drill," "incorrect drill," "educative drill," etc. Attention is called to a brochure entitled *Gegen den falschen Drill*, by Lieut. Rieter, a young Swiss officer. The author stigmatizes therein those who are continually losing themselves in a maze by becoming involved in useless minutiae or are allowing themselves to be overwhelmed, owing to their devotion to superfluities, by reason of the fact that they do not understand that the object of drill is not to produce external effects, but to develop the soldiers' intelligence in such a way as to habituate him to execute in the best manner

possible and without hesitation any movement which his commanding officer may order.

Satisfaction is expressed at the Winter Exercises recently carried out by the Swiss Cavalry. This number concludes with an unusually long *Bulletin Bibliographique*. Many of the books reviewed deal with the present War.

W. A. J. O'MEARA.

RIVISTA DI ARTIGLIERIA E GENIO.

October—November, 1917.

BELGIUM.

Armoured Automobiles.—Referring to the differences between the more recent English and French *tanks* mentioned in the *Rivista*, Vol. II., p. 294, and those of the Germans, notice may be made of the Belgian armoured cars which are constructed only to run on roads, and for which there are not many occasions in which they can be employed in trench warfare. Cyclists disperse in all directions for reconnaissance; the motor-cyclists in one with the armoured cars, that advance only when the cyclists have proper information on the strength and the position of the enemy.

GERMANY.

It was stated in this *Review*, Vol. I., 1917, p. 98—100, that the Germans during last winter had employed against Russia in the regions of the lakes near Bardnovitchi armoured cars similar to the English *tanks*. They now deny the pretended inefficiency of this new means of attack, as proclaimed unanimously by the German Press when the *tanks* appeared for the first time on their western front on the Somme.

A recent correspondent of Rotterdam in the *Neue Zürcher Zeitung* states that they have again made their appearance in Flanders as armoured cars differing somewhat from the English *tanks*, being constructed on the same principle for traction as the types with caterpillar belts which can overcome obstacles and even trenches.

He adds that the German armoured cars are armoured with a 75-mm. field gun, and several mitrailleuses; the armour covers the whole of the automobile including the wheels; a small commanding tower surmounts the body of the car.

Conductors of Compressed Celluloid.—The *Frankfurter Zeitung* states that there have recently been adopted in Germany in the chemical offices and the mines, conductors of compressed celluloid. The new material is absolutely impermeable and much lighter than iron; it can be cleaned like wood, and resists chemical action better than iron; it is a bad conductor of heat, but does not require any special arrangements for protection against cold. The tubes serve well for conducting hot or cold air, and corrosive gas which rapidly consumes the iron tubes, but they cannot be used for conducting steam.

It may be noted that this adoption has not the character of novelty; notices in the English and American periodicals make mention of conductors constructed from fibres and other analogous substances.

VARIOUS STATES.

Employment of "Stellite" for Tools for the Manufacture of Projectiles.—According to notices from several sources recorded in *The International Military Digest*, the use of stellite for the tools used in the manufacture of projectiles is extending, the results being very superior to those obtained by the use of steel. Stellite was invented about four years ago in the United States by Elwood Hayes and is an alloy composed chiefly of cobalt and molybdena, or of cobalt and chromium, or of three metals in different proportions with an admixture of manganese and other metals. The points only of the instruments are made with this; they are heated electrically, and the body of the instrument or tool is made of common steel.

The advantages of this alloy are its hardness that remains at any temperature even when the metal is red hot; and its resistance to oxidization.

As an example of the superiority of instruments pointed with stellite in these times of intense production of munitions it is reported from the foundry of Gobelins of Paris that by substituting stellite for steel they succeeded in raising the general production from 120 to 200 projectiles of 155 mm.

By using stellite in the manufacture of 1,000 shells of 155 m. the gain amounted to 0.30 lire per shell.

The quality of this alloy varies according to the proportion of its components. By gradually increasing the quantity of molybdena, stellite always becomes harder, and even serves for cutting deeply into glass.

The analysis of typical stellite gives the following results:—

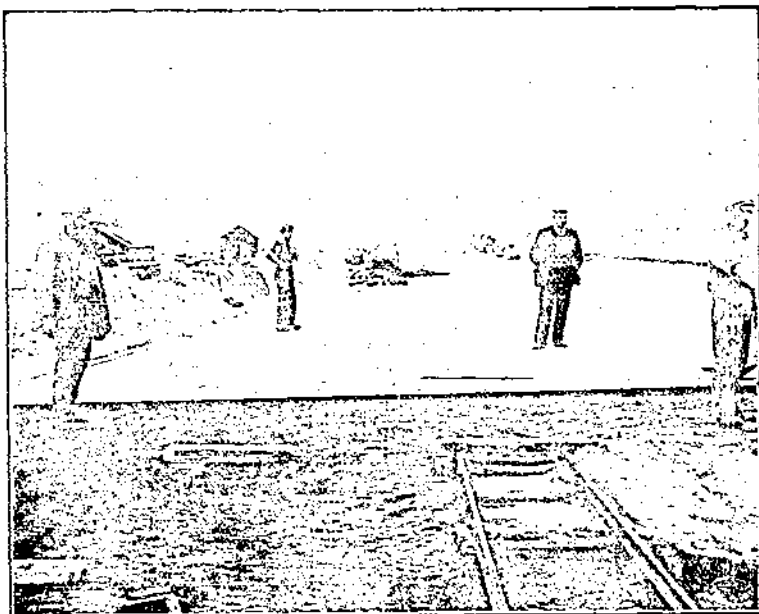
Cobalt	...	...	...	...	50.50"
Molibdena	...	...	...	...	22.50"
Chromium	...	...	...	...	10.77"
Iron	...	...	...	...	3.11"
Manganese	...	...	...	...	2.04"
Carbon	...	...	...	...	0.87
Silicate	...	...	...	...	0.77
Sulphur	...	...	...	...	0.084
Phosphorus	...	...	...	...	0.04
Traces of other bodies	...	...	...	...	0.316

100.000%

Stellite has a white silvery colour and is insoluble in nitric acid, and is only slightly affected by hydrochloric acid.

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