

HAD DEVICE TO WARN OF SHELLS

Listening Instrument Operated With Uncanny Accuracy.

GREAT WORK OF ENGINEERS

War Department Relates Astonishing Achievements of Corps at Home and Abroad—One Device Spotted 117 German Gun Positions in Single Day—Corps Also Produced Most Powerful Searchlight in Use.

The war story of the engineer corps at home and in France is told officially for the first time in chapters of the war department's brief history of American war efforts, made public in advance sheets. Many of the recorded accomplishments of the engineers have been published before as isolated incidents, but this is the first complete and connected story which gives an idea of the extraordinary scope of the duties modern warfare laid upon engineering troops.

Probably the best illustration of this so far as the troops in France are concerned is the technical organization of the units of the engineers which reached the other side. There were seven regiments and two battalions of railway construction engineers, five battalions for maintenance of way; two battalions for maintenance of railway equipment; four regiments and one battalion to operate the main American railways in France; three regiments to operate light railways and their repair shops; two regiments to operate the regular railway repair shops; two regiments and six separate battalions on general construction work; two regiments for storing and transporting engineer supplies; a forestry regiment; a light railway construction regiment; a road building regiment; a water supply regiment; a mining regiment; a quarrying regiment; a technical regiment for surveying and sound ranging; three survey and printing battalions; two railway transportation battalions; an electrical and mechanical regiment; several separate companies to operate cranes; a camouflage service; five inland waterway companies to operate canal boats and the like; five pontoon trains and a pontoon park; a railway transportation and stores battalion and a searchlight regiment.

And Then There Were the Sappers. These special units, all composed of men trained in civil life in the United States for the work they did in France, were in addition to the fighting engineers with each division, the sappers, who formed about eight per cent of all of the combat troops in France. One section of the report is devoted to the development of American railways in France and to the production of railway equipment in the United States to meet the call from the front. There were shipped to France 1,303 locomotives before the armistice was signed, of which 908 were in service at that time. In addition, 18,313 freight cars were shipped abroad, both engines and cars having been produced specially for service in France. These were employed upon the 937 miles of standard gauge track laid in France by the engineers with equipment shipped from this country, and the rolling stock was in addition to great quantities of light railway equipment for front line work that was also sent abroad.

Hospital trains were obtained in England, 19 of them with a total of 304 cars having been completed by December, 1918, with 29 additional trains under construction. They cost more than \$18,000 per car, but it is estimated that to have produced them in the United States and shipped them would have cost \$40,000 per car. The report lays stress on the fact that great progress was made during the war in the development of road building, railway, and other engineering equipment which will be of value commercially in peace time. The motorized machine shops alone, it is stated, are practically certain to bring about in this country the use of moving shops of this character in agricultural communities as farming machinery increases.

"The day has come," the report says, "when the traveling machine shop will be a familiar sight upon our rural highways."

Among the motorized shops created were the photolithographic press trucks, which were able to produce maps from original sketches within 12 hours, as compared with four days required by similar French and British units.

A special chapter is devoted to listening instruments developed during the war to locate hidden guns. Improving upon allied designs, the engineer corps produced machines for this purpose which operated with "uncanny accuracy," one of them having spotted 117 German gun positions in a single day. Subsequently these were followed by instruments of even greater power, and at the close of the war there were 12 complete outfits, each covering a five-mile stretch of front, at work on the American lines. Similar development of instruments for locating hostile airplanes were carried out until it was possible to determine the location of a raider at night within an angle of three degrees. The American types produced were easily portable and quickly set up to aid the searchlights. A hint at the scientific developments which

were in sight in connection with these sound-ranging devices is contained in the following paragraph:

"When the fighting stopped our military scientists and others co-operating with them were working on the development of a sound-ranging apparatus intended to give troops warning of shell fired by the enemy in their direction. The preliminary experiments found that at 4.1 miles these mechanisms could detect the firing of the gun as long as 19 seconds before the shell arrived, thus giving troops ample time to get under cover. Such a development was possible because of the far greater speed with which earth vibrations travel than those of sound in the air."

"Except for lack of time in the brief seconds between the firing of the gun and the arrival of the shell it would be quite possible with this proposed apparatus to calculate almost exactly where the shell would land."

The Most Powerful Searchlight. The corps produced also a new form of searchlight more powerful than any that had preceded it in any army, and with which the Second Field army had been partially equipped.

"It weighed," the report says, "one-eighth as much as lights of former designs, cost only one-third as much, was about one-fourth as large in bulk, and threw a light ten per cent stronger than any other portable projector in existence."

The engineers were at work when the fighting ended upon a mechanism which would enable them to control searchlights from a distance.

The chapter devoted to the work of the engineer corps in France draws a vivid picture of the duties of the combat engineers who played their full part in the fighting from the beginning to the end. It also tells in detail of the building of the railways, the cutting down of French forests to convert them into barracks for American troops; of the miles of highways built and constantly rebuilt as shellfire tore them to pieces; of cement mills taken over in France by American troops to produce trench materials; of the great map-printing plant, where the engineers finally were able to produce not only all maps needed for the American army but even supplied the French Seventh and Eighth army with base maps for their fronts.

In this huge plant at Langres in November, over 1,900,000 lithographic prints were made and over a million sheets of type work done. There is told also the story of a camouflage factory at Dijon where material to blind enemy airplanes' eyes and to confuse the enemy's pickets was turned out in vast quantities.

"Utilizing and applying the new knowledge and scientific achievements of recent years," the report says, "concluding that portion devoted to the engineers, 'drawing upon the fund of experience acquired by the regular army in its theoretical studies and past wars, making available the vast amount of technical skill which has assisted this nation to its present commercial and industrial status, the engineers of the United States army worked and fought, planned and accomplished in France a work which in magnitude exceeds any similar undertaking recorded in American history. From base ports to first waves of an assault upon the enemy's positions, engineer troops have been constantly in action, first to last, and have 'carried on' always with the high ideals of the professional and with the motto of the corps of engineers—'Essays' (Let us try), before them."

DRIVING THEM OUT

Returned Soldiers Have Constituted Themselves Into Courts.

Returned soldiers in the Lemmon, S. D., territory have constituted themselves judges, jurors and executioners in all cases in which the United States army or the United States is slandered, and will drive from the community all men guilty of such slanders. As a starter in their campaign to rid the country of these men they already have driven one undesirable from Lemmon. The soldiers waited on the individual, who is a Russian, and gave him 30 minutes to leave town, threatening that if he was found in town at the expiration of the half hour period he would be treated to the roughest handling he ever received.

It is announced that the soldiers are about to take action in another case, it being intimated that this is a much more flagrant case and that accordingly the treatment will be much more severe.

Others are expected to be given the "move-along" order, the intention being to purge the community and vicinity of all persons of known pro-German and anti-American sentiments. Cool heads among the soldiers are cautioning them to be careful and not do an injustice to any person.

NO PRIDE IN DEATH

Cemetery Directors Insist That Graves of Rich and Poor Be Alike.

Pride, haughtiness, distinction—in death? The thought alone is a Christian sacrifice, much less the dead itself.

So reasoned the directors of the Lakewood Park Cemetery association of Lakewood, O., who demand that the resting place of the rich man and the poor man hereafter must be uniform—a modest headstone, rising not more than a foot above the cemetery lawn.

"It does away with the attempt of well-meaning people to outdo each other in the size of their monuments," said George Thorne, president of the association.

The Scrap Book

VISIONS OF YOUTH STRONG

Incident Proves How Firmly First Impressions Are Imprinted in Child's Mind.

What won't impressions, received in childhood, do for a man? Take those two youths from the Tennessee mountains who desired, when they were infants, to go into the navy. Their mountain home was as far removed from the ocean as it well could be. They had never seen even a large pond. For three generations not one of their ancestors had seen the salt water. Yet these boys would not listen to any call for the army, but they demanded a place in the navy.

The story came to an officer in a nearby camp, and he became interested and visited that home. Both father and mother were puzzled over the action of their boys, and they could not understand why Henry and William had demanded the ocean.

As the officer turned away he noticed hanging on the wall in the living room of that house the crude picture of a ship under full sail on an impossible blue ocean. It had come into that family years before, wrapped round a package of goods, and mother had hung it on the wall. Those boys had grown up with that picture before them, and it had decided their life. It was stronger than the influence of father and mother—they could not overcome it.

Men and women with children of their own ought to understand how the dreams, the poetry, the visions of youth will prove stronger influences than any of the science, or the wisdom, or the fine example you may get before your little ones.—Exchange.

NATION'S FIRST LIBERTY LOAN

Was Floated by Alexander Hamilton Immediately Following the War of the Revolution.

America's first Liberty loan was launched 129 years ago, in March, by Alexander Hamilton, the first secretary of the treasury, after a bitter fight in congress. The continental congress had incurred debts aggregating \$54,000,000 during the Revolutionary war, while the various states of the new republic had obligations amounting to \$25,000,000 more. Of the national debt \$12,000,000 was owing abroad, and all the members were of one mind in paying that, but opinion was divided about paying notes held at home. The South had practically paid its own way through the war and it objected to being saddled with debts contracted by the northern states.

Then, as now, sharps were busy all over the country buying up the government's bonds, and paying less than they were worth. People were old that the country was too poor and too sparsely settled (there being less than 4,000,000 people in the country) to pay the huge indebtedness. President George Washington supported Hamilton in his fight and after two months' argument the federal government assumed the whole nation's indebtedness and the first Liberty loan was floated.

SIMPLE MATTER TO EXPLAIN

Butcher's Ready Explanation of Circumstance Which Aroused Considerable Ire in Customer.

An irate customer entered the butcher's shop, threw down a piece of meat on the counter, and indignantly exclaimed:

"What do you call that, sir?"

The man of pork examined it, and replied:

"It looks like a bit of brass."

"Bit of brass—of course it is; and do you know where I got it? Why, in one of your sausages."

The butcher put up his hand, rubbed his double chin, and said he thought he could explain it.

"Yes, and explain it you will before I leave this shop," continued the excited one.

"Well," drawled the butcher, as he smacked his lips, "I must have forgotten to take the collar off!"

Didn't Say That.

A little girl was invited to a friend's house for dinner, and before leaving her mother warned her to say "please," "thank you," and "no thank you."

When the little girl returned she was asked if she had been good.

"Did you say 'no, thank you,'" asked her mother, "when they passed something you didn't want?"

"No, mother, I didn't, because they didn't pass anything I didn't want."

"Nuff Sed."

"Brown, why does Charlie refuse to speak to you? You used to be great friends."

"Yes, when we were bachelors, but he's married now."

"And what difference does that make?"

"Well, the fact is, I made him a handsome wedding present of a book, and he hasn't spoken to me since."

"What was the book?"

"Paradise Lost."

RULES FOR LETTER WRITING.

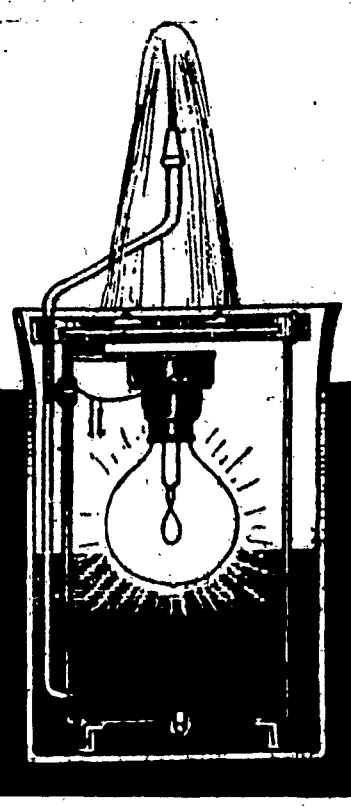
Have you any unkind thoughts? Do not write them down. Write no word that gives pain; Written words may long remain. Have you heard some idle tale? Do not write it down. Gossip may repeat it o'er, Adding to its bitter store. Have you any careless jest? Bury it, and let it rest; It may wound some loving breast. Words of love and tenderness, Words of truth and kindness, Words of comfort for the sad, Words of gladness for the glad, Words of counsel for the bad—Wisely write them down. Words, though small, are mighty things. Pause before you write them. Little words may grow and bloom With bitter breath or sweet perfume; Pray before you write them.

ELECTRIC LIGHT IS PUMP

Home-Made Fountain, Recently Patented, the Novel Idea of a Cleveland Man.

A home-made fountain that makes use of an electric light for the pump is a novelty recently patented by Mr. Matt Luckiesh of Cleveland.

As shown in the accompanying illustration this simple fountain makes use of a 150-watt high efficiency electric lamp, placed in the upper part of an airtight vessel partly filled with water.



A 150-Watt Tungsten Lamp Does the Pumping.

ter, and having an outlet tube connecting its lower portion with a nozzle of capillary dimensions.

The expansion of the air above the water, due to the heat given out by the lamp, forces the latter out through this nozzle and the spray is caught and overflows into an outer vessel, explains Scientific American. When the current is turned off, the air pressure falls and the water returns to the inner vessel through a check valve at the bottom.

The British Army.

The British army at home and abroad, exclusive of the force in India, now numbers 2,500,000 men, and is being reduced to 952,000, according to a White Paper issued by the government.

The Army of the Rhine, including troops in France and Belgium, will consist, after demobilization, of 23,000 officers and 850,000 men. The armistice of the middle east will be as follows: Italy, 600 officers and 10,000 men; Bulgaria, Turkey and the Caucasus, 4,850 officers and 75,000 men of the British army and 1,150 officers and 19,500 men of the Indian army; Egypt and Palestine, 3,750 officers and 55,000 men of the British army and 2,750 officers and 40,000 men of the Indian army; Mesopotamia and northern Persia, 1,750 officers and 28,500 men from the British army and 4,600 officers and 59,000 men of the Indian army.

The home and colonial establishment, including troops in Russia, will consist of 15,000 officers and 225,000 men. At present 1,150,000 men of the British army are being demobilized and also 73,000 men of the Indian army and 325,000 men from the dominions.

Pertinent Question.

Amos W. Butler, secretary of the board of state charities, tells a good one. It runs like this:

Early in the days of the legislature Mr. Butler sat placidly at his desk in the board of charities office opening his mail.

"Dear Amos," read one letter, "— I . . . I . . . ?" Mr. Butler read on, but it became clearer that the letter was intended for another Amos, who was spending some time about the legislative halls, that is, in connection with the third house. The fact that the letter had gone wide of its mark grew plainer and plainer. Finally the letter closed with the query:

"I'm coming down to the legislature in a few days. Do you think I'd better bring a quart or a gallon?"—Indianapolis News.

The Goods, All Right.

First Gossip—Don't tell a soul, but I saw a whole barrel of whisky delivered to the Topleys this afternoon in broad daylight.

Second Gossip—How'd you know it was whisky?

First Gossip—Why, Topley himself helped the delivery man handle it with are.—Buffalo Express.

LEGENDS OF THE ELEPHANT

Many and Wonderful Are the Tales Told Concerning Its Virtues and Its Wisdom.

Naturally we talked first about elephants, of which he was almost as childishly fond as I. But in contrast to my poor knowledge, he possessed the rich lore of a man who had not only observed them for many years with loving interest, but had also listened to the tales of mahout and shikari from Siam to Ceylon. He poured out a hundred gifts from an apparently inexhaustible store. He told of "round-ups" in Burma, when the wild herds are driven into gigantic corrals to be tamed for the service of pany man. Then, turning to the names bestowed by dotting mahouts on these colossal darlings, he pointed out that in this nomenclature of affection Lotus, or Lily or Pearl was only a commonplace, while even Silver Star and Golden Joy seemed inadequate. Folk tales, too, he repeated, among them the narrative of the wise elephant that used to be sent out from a certain city the morning after the king's death to bring back in its bejeweled howdah the man it had chosen as successor to the throne. Finally, just as we were leaving the bank of the stream, he spoke of the part played by the elephant in the story of him who became the Light of Asia. Before the birth of Gautama, destined to be the savior of mankind, his mother dreamed that a six-rayed star from heaven entered her right side, and of this star the token was a white elephant with six perfect tusks. Again, in the prophetic vision of his father, the second Fear was ten huge silver-tusked elephants, signifying the ten great gifts of wisdom, in strength whereof the prince should shake the world. In Buddha's middle years an enemy sought to take his life by sending against him a raging elephant, but the animal recognized the good head of the "Venerable Omiscient One" and stood in peaceful adoration before the divine person.—Asia Magazine.

MAKE YOUR OWN DECISIONS

Feeble Habit of Looking to Others to One That Should Be Sparingly Repressed.

Most people who have succeeded in any direction of activity can trace the measure of their success to the habit of deciding things for themselves. One of the greatest temptations we have is to confide in others. By yielding to it we not only become a nuisance to our friends but keep on lowering our own powers of resistance. It is wiser than useless to ask the advice of others, because they are rarely so much interested in our troubles as we think they are, or would like them to be. If they were, they would have to know much about our troubles as we do, to pass judgment, and this we can not tell them even if we would.

Sometimes indeed we may know much about our own troubles, but in such a way that the conventional thought of them puts them in the wrong perspective; but this situation is only made worse by adding the conclusion of another's mind to mine.

By deciding everything for yourself you make mistakes; but every mistake is a valuable future asset. It is the only way you can learn how. Learning how is very necessary. Unless you are willing to do this and stand upon your own ground, your permanent success will be doubly difficult.—Pictorial Review.

DAME NATURE'S LITTLE JOKE

Old Lady, Seems to Have Played Favorites in Arranging Some Climatic Conditions.

Nature plays a cruel joke in the difference of altitude of India and Tibet. Had they been reversed one would have said that it was a providential arrangement. The traveler who crosses the Himalayas from Cashmere has to climb nearly twice as much as the traveler who comes from the north, because while India averages only perhaps 100 feet above sea level, Tibet averages 12,000 feet, and for this reason is called the Roof of the World.

Now, had India had this elevation, south of the mighty range of the Himalayas, and thus shielded from the north, as well as nearer to the equator, her climate would probably have been as temperate as Britain, and one of the healthiest in the world. While had Tibet lain as low as India, instead of being the driest, most inhospitable of lands, it would, by reason of its latitude, be one of the most habitable countries in the world.

Swallowed a Pet Chameleon.

Four years ago I purchased a chameleon at the Wakefield fair, F. H. Sidney writes in Boston Evening Transcript. The little fellow made himself at home among our house plants and kept them clean of bugs; he became tame and answered to the name of Mickey. The tiny lizard would come when we called him; and he kept the plants free from bugs and the house clear of flies. On warm days Mickey would crawl out onto the piazza and sun himself. One day my neighbor's flock of guinea hens wandered around my house, and although Mickey had changed his color to that of the piazza boards, the sharp-eyed guinea eyed him and made a rush, and before my pet could escape one of the guinea hens swallowed him. I complained of the guinea to my neighbor, but he said his guinea were too well bred to invade any one's premises; and that furthermore, lizards were reptiles and not fit for house pets.

Origin of Neck Shaving.

A study of the many necks to be seen on the walls of the National Portrait gallery enables me to state that the custom of neck shaving, although said to have been recently imported from America, was undoubtedly known and most likely popular in the days of Agincourt.

The portrait of Henry V. shows quite clearly that his neck was shaved, and if the king did it it must have been fashionable.

Most Americans have their necks shaved, and in one of Jack London's novels, the hero, a teamster, on strike, points out to his wife that he must patronize the barber because he cannot possibly shave his own neck.—London Express.

Where Wives Are Cheap.

What is the market in wivies? It is said that among the Anas the price of one is a bear ham. The Kafir figure varies from four to eight oxen, according to the competition for the particular bride.

A score of cartridges buys a wife in Uganda, and the Australian black gives the weight of his better half in butter, while the Tartars in Turkestan get as many wives as they want at the rate of a box of matches each.

In Wales wives are given away—they are paid for afterward, mostly in weekly installments.—Cardiff Western Mail.

Galen's Faith in Nostri

Early Father of Medicine Claimed Wonderful Virtues for Compound Known as Mithradatum.

Mithradatum was the name of the great antidote of Roman pharmacy. It had from 40 to 50 vegetable ingredients, few of which had any real medicinal value—except opium, and these drugs were blended with honey.

It remained for Nero's physician, Andromachus, to put the finishing touches to this wonderful compound. Andromachus added viper's flesh to the formula and called his new compound theriaca. He wrote some verses dedicated to Nero, describing this medicine and claiming virtues for it which in our day would subject him to prosecution under the anti-trust act. Evidently he believed he had created in this one compound a veritable pharmaceutical monopoly.

Galen, one of the fathers of medicine, went even further. He recommended it as a cure for all poisons, bites, headaches, vertigo, deafness, epilepsy, apoplexy, dimness of sight, loss of voice, asthma, coughs, spitting of blood, tightness of breath, colic, the iliac passion (appendicitis), jaundice, hardening of the spleen, stones, fevers, dropsy, leprosy, melancholy, all pestilences, etc. Nowadays he would probably have included cancer, thumb, golf shoulder and movie eye.

An Galen's writing dominated medical thought for over 1,500 years. It is not surprising that this advertisement made Mithradatum, or Theriaca, a valued remedy. Every physician of note for centuries afterward claimed some improvement on the original formula.

THE VEDAS OF CEYLON.

Students have long been interested in the Australian aborigine, the African bushman, and the Ceylonese Veddah. The Veddas are recorded as far back as 541 B. C., and their customs and beliefs are thought to have changed but little since the stone age. But the Veddas, on report of a traveler lately returned from the wilds of Ceylon, are reaching the end of this peculiar interest. For now, hardly a Veddah faithful to the traditions of his ancestry survives; not one, perhaps, that wears leaves for clothing and depends for subsistence solely on the products of the jungle. The bow and arrow are still sometimes used, but have been largely supplanted by old-fashioned muske-loading guns, and the skillful archery for which the Veddas were notable has become lost art. In this Ceylon jungle, the typical Veddah are left, but they are isolated specimens. In any circumstances it has been held that the Veddas are incapable of civilization. But then that depends, of course, on what is meant by civilization.

Dream Reveals Crime.

A dream once played its part in a celebrated English criminal case—the "Red Barn Murder"—the memory of which is kept alive by the melodrama still played in country towns.

Mrs. Marten, the mother of Maria Marten, the victim, dreamed three successive nights that her daughter had been murdered and buried in the Red Barn. She insisted that the deed should be taken up.

This was done and the body of the missing girl was found, and constituted a link in the chain of circumstantial evidence on which the murderer, William Cordery, was convicted and executed in August, 1828.

Tricks of Watches.

Watches are tricky things in peace time, writes a correspondent, and war time seems to have made them trickier than ever.

The universality of the wrist watch has led to some queer discoveries. I know an officer, for instance, on whose wrist no watch will work properly; the same watches, transferred to another soldier's wrist, regain their composure and keep time.

In another instance the same watch will persistently gain on the enemy's wrist and lose on the enemy's wrist.—London Chronicle.