

# ARMOR for MODERN FIGHTERS

Many Models Have Been Made and Are Now Being Tried Out by Americans at the Front.

MANY a visitor wandering through the labyrinthine lights of the Metropolitan Museum in New York and coming upon the collection of arms and armor in the main gallery has re-incarnated a past of tall knights and gentle ladies, has fancied himself a Launcelot or Guinevere, in the city's splendid collection of mail and plate, of decorative trappings, battle axe, spear and broad or long sword.

And many, no doubt, have stood in fascination before the medieval armor's workshop set in a paneled recess of carved oak to the left of the gallery, a miniature bit of Old World charm, worn anvils, hammers whose stroke has rung through centuries of steel, modeled knights in the gray poppy of the Middle Ages, and the accoutrements of a warfare when combatants clashed to the sound of trumpets.

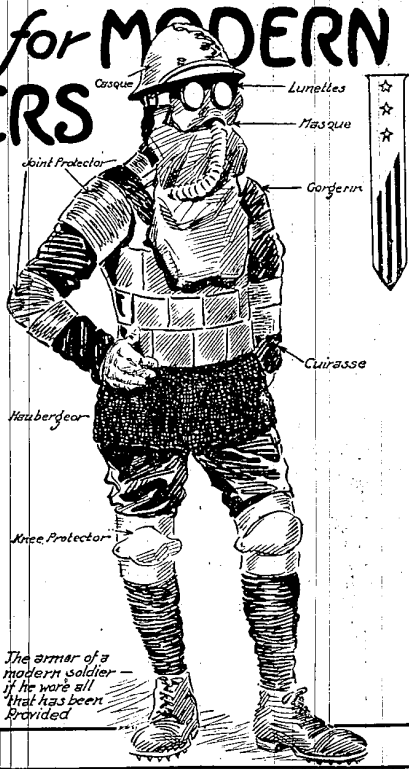
But only a few of the visitors to the museum have been fortunate enough to get lost in the cool, corridor-lined and find, tucked away in an inconspicuous corner, a complete practical armor's shop, where a master armorer piles his inherited art with a skill that puts him on a level with some of the great master armors of the Middle Ages, writes K. H. McClonkey in New York Tribune.

This artisan is M. Daniel Tachaux, and those few who have been permitted to swing open his shop door—a door quite like many another along the corridor—may well count themselves among the fortunate blessed, for they have seen a shop like no other in this country—a show now closed to the public and guarded by all the impassable and invulnerable barriers of government regulation.

For here, in a workshop originally established for the purpose of cleaning, repairing and, in some rare cases, restoring pieces of defective armor, M. Tachaux and his young French assistant, Sergeant Bartel of the ordnance department, are carefully working out designs and models of defective armor that will soon be sent to the front, and which it is expected will result in cutting down to a very great degree, as the helmets have already done, as the percentage of killed and wounded in this present war.

Forty Models Now at the Front. When the war broke out Mr. Robinson, director of the Metropolitan Museum, learning that the government was in need of models for the purpose of studying the construction of the armor, obtained the permission of the trustees in placing the department of armor at the disposal of Secretary of War Baker. Bashford Dean, curator of the department and who has given his life to the study of the subject, was commissioned as a major and immediately sent abroad to report on the status of armor—what was already in use and what additions might possibly be made. He returned to the United States late in January of the present year, and has since kept the armor workshop of the museum busy, on holidays and week-days, turning out models in accordance with the suggestions of General Pershing and the ordnance department. After careful and patient experimentation he experts forty models have been tried out on the fighting front.

Here in the little workshop where the sun comes in through miniature panes and is deflected in myriad colors by small tools, age old, bits of bronze and steel, bright from pounding and armored suits wrought with the intricate traceries of medieval decoration, M. Tachaux piles with skill and the ease of long practice the very tools used by his ancestors and handed down from father to son through hundreds of years. The museum has collected from all parts of the world the implements and tools of the fabrication of ancient armor, comprising some ninety kinds of anvils and "stakes" several hundred different types of hammers, curious shears and instruments whose use would be quite unknown were it not that their armorers—heirs of a past skill—are living today. One of these is in Dresden, one in Switzerland, two in Japan, one in London and the other America has in the person of M. Tachaux, who has collected about him the dusty romance of an almost forgotten art and



The armor of a modern soldier—if he were all that has been provided.

In this corner of an underground city has labored to preserve the relics of these so-called centuries when knights were tall and ladies passing fair.

Now thanks to him who has kept alive an art long considered dead, this country is able to benefit by the advice of an expert in metals, and no longer does M. Tachaux labor over ancient pieces, but lends all his efforts to all his training and all his knowledge, to the making of armor that can be worn by the modern soldier—armor heavy enough to be invulnerable, light enough to carry.

Remove Work of Old Masters. This question of weight and therefore practicability of armor for the man on foot—the man who makes a charge—was the first thing that came to the mind of M. Tachaux, when the use of defensive protection had practically disappeared and an attempt was made to revive the steel helmet. Indeed, the development of armor from the time of the armor until the use of firearms is one of exceeding interest at this time, that the government is reviewing the work of some of the greatest of the old masters in armor making, with a view to refuting the loss and most feasible of the old methods of defensive protection.

The use of armor dates back to the sixth century B. C. and became more elaborate and complex until the introduction of gunpowder. The helmet was the first body protection to appear and was followed by the cuirass—the latter being used by the Greeks and Romans and, reappearing at the time of Charlemagne in the form of a waistcoat made of overlapping metal scales and of rather imperfect execution.

What Norman Warrior Wore. In the eleventh century, according to the Bayeux tapestries as well as the seal of Richard Coeur de Lion, we find the coat of mail assuming first the shape of a redingote and later that of a bathing suit, completed by a helmet shaped at the nose. This, together with the use of leather plates on the feet and hands, constituted the equipment of a Norman warrior.

A study of the sculptures of the Reims cathedral and the evangelism of St. Louis (National Library) points to the development, in the twelfth century, of a perfected coat of mail, a metal combination called with the helmet by a pause-montage of steel links; the whole, constituting a hauberk, protected the warrior with the hauberk a cylindrical helmet made of steel plates, the hauberk being riveted and pierced by two peepholes. At the beginning of the fourteenth century the desire to protect the joints caused the placing of metal plates at shoulders and knees. The hauberk disappeared and was replaced by a helmet of a type called Basinet, with a movable visor pierced by holes to permit sight and ventilation. By the middle of the fourteenth century armor had disappeared to a considerable degree, and plate armor was taking its place, the plate armor at the joints being

extended to the inter-articular portions in such a way as to enclose the limbs in metal greaves; the hands were protected by an articulated gauntlet and the feet by an iron shoe or solet. The body was still covered by a skirt—called the lamure—around the waist, and the whole outfit was known as a "harnais," to which was added a steel corselet, prolonged over the abdomen by a sort of skirt of interwoven metallic rings—the "haubergeon."

Invulnerable But Helpless. Finally, in the reign of Charles VII, the complete cuirass appeared, augmented by shoulder pieces and the gorget, which united the armor to the lower limbs. This knight was now practically invulnerable, but so weighed down that he was almost motionless. The armor was so heavy that it was almost impossible to move. The armor was so heavy that it was almost impossible to move. The armor was so heavy that it was almost impossible to move.

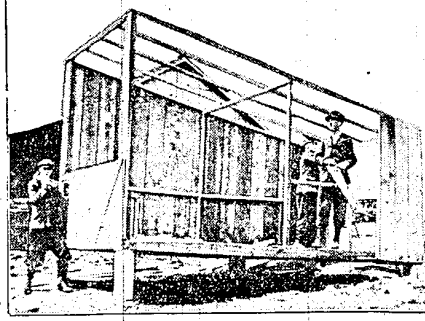
The elaborate armor of the knight which, in the fifteenth century, had become useless in the space of some ten years by the introduction of gunpowder. As early as the beginning of the fourteenth century, projectiles had become capable of piercing the armor in use at the time, and little by little the use of such defense disappeared. The tendency being to substitute fabric for metal protection.

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## A Bird in the Hand

(Special Information Service, United States Department of Agriculture.)  
BETTER POULTRY HOUSES PAY



Poultry Club Boys Building a Poultry House.

## COMFORT IN HEN HOUSE REQUIRED

Prepare in Early Fall for Cold, Disagreeable Weather When Fowls Are Indoors.

## ESSENTIAL FOR WINTER EGGS

Fresh Air, Dryness, Sunlight, and Space Enough to Keep Chickens Contented Are of Importance—Make Roof Waterproof.

During the summer the poultry-house question has not given the poultry-keeper much concern. The chickens have had the freedom of outdoor life most of the time and just so they had a clean, dry place, free from vermin, and covered with a good roof to keep out rain, was about all that was necessary. But as winter approaches and weather conditions are such that the fowls must be confined, it is essential that their indoor quarters be made as comfortable as possible. This is one of the requisites of winter egg production.

The prime consideration in poultry houses, according to the United States department of agriculture, are fresh air, dryness, sunlight and space enough to keep the birds comfortable. The particular style of house is not important. For a house that gives satisfaction in the North will also give good results in the South, but it is preferable to have more open and consequently less expensive houses in the South than in the North. The location should have good water and drainage so that the floor and yards will be dry, while the house should not occupy a low pocket or hollow in which cold air settles. When it is possible, a southern or southeastern exposure should be selected, although this is not essential if there is any good reason for facing the house in a different direction.

Importance of Roof. The roof is the most expensive but a most important part of the poultry house, and should be water-tight. Shingle roofs should have a one-third pitch, while those covered with lead or metal may have a less pitch, or be almost flat; however, the greater the slope the longer the life of the roof.

The shed or single-slope roof is adapted to houses up to 16 feet in width. It is one of the easiest styles to construct. It allows a high front to the house and furnishes a northern exposure for the roof on which roofing paper will last longer than on a roof which faces the south. The combination and semimonitor roofs are adapted for buildings from 16 to 24 feet wide, while either of these styles of the monitor and the gable roof may be used for wider buildings. The combination roof on a house over 16 feet wide gives the best head room at the least cost, retains the amount of surplus air space and gives a great appearance to the buildings; while the semimonitor and monitor types are best for wide houses which have a general ally, particularly brooder houses. The semimonitor houses usually face south, while the monitor type of roof is frequently used on buildings facing east or west. The gable roof is used

extensively for two-story buildings, for brooder houses, and for incubator cells. This style of roof is usually eaved at or slightly above the eaves, or the gable may be filled with straw or some kind of absorbent material, which tends to keep such houses dry and warm. The A-shaped roof is used for growing coops and colony houses which, with a wall 18 inches high, provides a large amount of floor space with a minimum amount of lumber, but increases the roof surface, which is the most expensive part of the house.

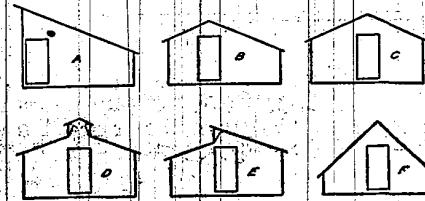
A large amount of glass in the front of the house makes it warm during the day and cold at night, as glass radiates heat very rapidly. Unbleached muslin, or a light weight duck cloth, is used for curtains in the front of poultry houses. This cloth should be thin enough to allow a slow circulation of air without a draft, which object is defeated by using too heavy a grade of duck or by oiling or painting the cloth. The front of the house should be high enough so that the wind or on a winter day will allow the sun to shine well back during the winter.

## Good Floor Important.

The best kind of a floor depends upon the soil and the use of the house. On light, sandy, well-drained soils a dirt floor is satisfactory, especially for small or colony houses. Such floors should be from two to six inches higher than the outside ground surface, and it is advisable to renew them each year by removing the contaminated surface gradually, mixing up and to refill with fresh sand or the gravel and earth. A board floor is generally used where the level of the floor in the house is from one to three feet above the ground. It is a portable house on land which is not well drained. Board floors harbor rats and roaches, and should be raised some distance off the ground so that cats or dogs can get under them, which also allows a free circulation of air to prevent the wood from rotting. Cement floors are adapted to long permanent buildings, brooder houses, incubator cells, and to all permanent houses where an artificial floor is required and can be built on the ground level. These floors are easy to clean, very sanitary, rat proof, and comparatively inexpensive, if one has a supply of gravel or shaly sand.

The interior fixtures of the pens should be simple, portable, and inexpensive. Roosts are usually placed next to the end or back walls, six to ten inches above the dropping boards, while the latter are from two to four and one-half feet above the ground. They should all be on the same level, otherwise the birds will crowd and fight to get on the highest roost. Scanning two by three inches or two by four inches, with the upper edges rounded off, makes good roosts for either the wide or narrow surface. Allow seven to ten inches of roost space per fowl, according to the size of the bird. Roosts should be placed about 15 inches apart, but the outside ones may be within ten inches of the edge of the dropping boards.

Nests may be placed under the dropping boards, on the partition walls, or in any convenient place where they do not take up floor space, and should be made of straw, or other material, put into them easily. They should be 12 to 14 inches square and 12 to 16 inches high, with a strip about four inches high, on the open side to retain the nesting material. From one nest for every four or five hens. Trap nests are essential in any careful breeding work, such as pedigree breeding, or the breeding of exhibition poultry.



Types of Roofs for Poultry House. A, Shed; B, Combination; C, Gable; D, Monitor; E, Semimonitor; F, A-Shaped.

## Why Dread Old Age?

It doesn't matter how old you are if you keep well and active. Lots of folks are younger at 70 than others are at 40. Lane, bent back; stiff, achy, rheumatic joints; bad breath and deafness are too often due to neglected kidney trouble and not to advancing years. Don't let weak kidneys age you. Use Doan's Kidney Pills. They have made life more comfortable for thousands of elderly folks.

## A Michigan Case

Mrs. James M. Murphy, 610 Maple St., Sault Ste. Marie, Mich., says: "Kidney trouble came on me and I was so miserable that I was often unable to attend to my work about the house. My kidneys were out of order. My feet and hands swelled and I suffered from headaches and dizzy spells. I had run down until I took Doan's Kidney Pills. This medicine cured all the kidney symptoms and put me in the best of shape."

Get Doan's at Any Store, 60c a Box. Doan's Kidney Pills. FOSTER-MILBURN CO., BUFFALO, N. Y.



For Constipation Carter's Little Liver Pills will set you right over night. Purely Vegetable. Small Pill, Small Dose, Small Price.

## Carter's Iron Pills

Will restore color to the faces of those who lack iron in the blood, as most pale-faced people do.

W. N. U., DETROIT, NO. 39-1918.

## AVIATORS ARE ALWAYS BUSY

Americans on the Italian Front Take Advantage of Every Moment of Good Flying Days.

On good flying days, every moment of the day is utilized by American aviators in Italy. The men are up at five o'clock, and by six flying is in operation. Men go to breakfast in relays, so as to economize time, and sundown does not mean resting up for the day. One time-saving device I observed, says James H. Hare in Leslie's Weekly, was to make landings some 200 meters from the beach, and to have the aviators for a hour or so to take his place equipped with his life preserver and helmet. The exchange took usually less than two minutes. When the time the engine was stopped until the propeller came to a standstill, and the engine was started. This also eliminated the liability of damaging the hydroplane in landing it, as sometimes the wheel is grounded, or one of the wings strikes an object, putting the machine out of commission for a time, to say nothing of the engine overheating as it "takes" (in the technical term) to its landing place.

## Catarhal Deafness Cannot Be Cured

by local applications as they cannot reach the diseased portion of the ear. There is only one way to cure Catarrhal Deafness, and that is by a constitutional remedy. HALL'S CATARRHAL MEDICINE cures the Mucous Surface of the System. Catarrhal Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube is inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed, deafness is the result. Unless the inflammation can be removed from the mucous membrane, the condition, hearing may be destroyed. Deafness is caused by Catarrh, which is an inflamed condition of the Mucous Surface of the System. HALL'S CATARRHAL MEDICINE cures Catarrhal Deafness. It is a Constitutional Remedy. It is sold by Druggists. Circulars free. F. J. Cheney & Co., Toledo, Ohio.

## The Reason.

Her—Hunting! Do you still love me? Him—Angel of my existence, I adore you. Her—Do you dream of me, precious one. Him—No, eternal being, I do not. Her—You mean thing, explain yourself at once. Him—Because I can't sleep for thinking of you. (And they went into another cluck.)

## A New Way to Shave

Tender skins twice a day without irritation by using Cuticura Soap. The "Cuticura" Way. No stings, no stings, waste of time or money. For free samples address, "Cuticura, Dept. X, Boston." At druggists and by mail. Soap 25, Ointment 25 and 50.—Adv.

New Orleans is closing many saloons for military reasons.

Philadelphia convicts want to be sent to France to fight.

## Your Eyes

Granulated Eyelids. Eyes inflamed by exposure to Sun, Dust and Wind quickly relieved by Murine Eye Remedy. No Stinging. Just Eye Comfort. At Your Druggist or by mail 60c per Bottle. For Book of the Eye free write to a Murine Eye Remedy Co., Chicago.

## Fishing With a Shovel

Fishing with a shovel is the latest fad to develop in Milwaukee and right to the heart of the city, too.

Paul Ihig, proprietor of the saloon at the east end of the Omaha bridge, which closed one day, started the new sport the next.

While looking over his former place of business he saw a number of fish swimming near the surface of the Milwaukee river, next to his saloon.

## No Restriction on Outrigger Fish.

Outrigger fish is meat which is not very popular at the present time, but it was once considered one of the finest dishes ever made.

The meat is rather hard to digest, though even it is said to be good for the stomach. It is said to be good for the stomach. It is said to be good for the stomach. It is said to be good for the stomach.