

A radiograph of the human fingers revealing coins and watchguard hidden beneath

method gives sharper definition—and which negative position the operator has to allow for.

The details of the radiograph give the relative indications of the nails, and surface of the bone structure. The tips of the first phalanges of the fingers are shown very perfectly.

It does not necessarily follow that a radiograph (photograph) has to be made to reveal anatomical faults. The presence of these rays is detected by the luminescence of certain fluorescent substances, *i.e.*, platino cyanide of barium, sodium, or potassium, &c., placed on a screen. And when the patient places his limb between the rays and one of these coated screens a shadow is projected which shows clearly the bone-structure; while a piece of wood or vulcanite interposed does not prevent the luminosity. J. J. WARD.

Utilising the Wind

OUR photograph on the opposite page shows the wind-power plant on the *Discovery*, the vessel in which the Atlantic Expedition has gone to try and locate the South Magnetic Pole. The *Discovery* is to be away three years, and it is, of course, important that she should use her coal supplies as sparingly as possible. In order to enable her to do this a wind-power plant has been erected by means of which the wind will be used to work a dynamo and thus generate a current for lighting the *Discovery* or for any other purposes for which it might be required.

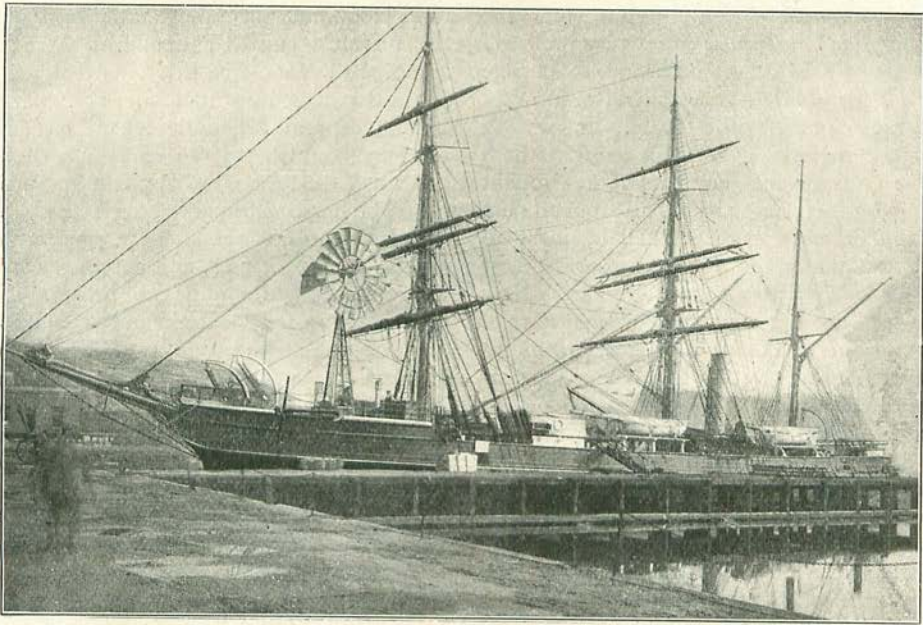
H. F. C.

Military Pay: Notes of Five Centuries

IT is a remarkable fact that the further we go back in history, and, therefore, the more nearly military service approached the normal condition of those above the rank of agri-

cultural labourer, the better seems to have been the pay of the soldier. If we take a period of five hundred years, a steady decline in his condition is to be seen. He was generally better off than the labourer, though not invariably, and he did not always get his pay. The pay of the officer, under the old feudal system, which he obtained, for instance, in the campaigns of Edward III., may seem high, but then so were his expenses. For from forty to sixty days he took the field,

helps us much. The cost of board alone gives us some notion of the standard of comfort. At Agincourt, three-quarters of a century later, the pay was very much about the same. Now the agricultural labourer had during this time *4d.* to *6d.* a day, a carpenter, say, *6d.* An artisan could always get work—witness the buildings that have come down to us—but the labourers had a bad time in the winter. Board we may take at *2d.* a day. It is generally admitted that the



The "Discovery" showing wind-power plant

at his own expense, and it was a point of honour, being a tenant of the Crown, that he should bring with him as many men capable of bearing arms as he possibly could. He was bound to provide a certain number. We may be certain that he was always out of pocket, and he was very often ruined. At the date of the Crecy campaign the Prince of Wales had £1 a day, an earl *6s. 8d.*, a baron *4s.*, a knight *2s.*, and an esquire, captain, or leader *1s.* A mounted archer had *6d.*, a foot archer *3d.* Probably, if we multiply by twelve, we shall get as true an idea of the value of money reckoned in our coinage. No amount of expert evidence

labouring classes were well off in the fifteenth century. The soldier had opportunities of plunder, and booty and ransom were part of the trade of war then. Many and many a man came back a great deal better off than when he started. But the system of ransoming captives was speculative in the extreme. Some men spent a large portion of their lives in captivity, waiting for an exorbitant ransom which often never arrived. For this cruel system the nobles were mainly responsible. As to the status of the private soldier, the archer, drawn from the yeomanry—the small freeholders—was undoubtedly a better man than the private of to-day. I think we

may very well compare him with the Imperial Yeomanry of the twentieth century, men not dependent on the day's work for the daily bread. Sometimes the labourer himself appeared on the field of battle with the implements of agriculture. It was well for him if his side was victorious. The Wars of the Roses were fought more by the men-at-arms than the archers; they were paid probably as the leaders and squires, &c., at Crecy and Agincourt, 1s. a day, say. But during this part of the fifteenth century, during the whole century, in fact, the labourers and artisans were very well off indeed, and had little temptation to change their lot for soldiers in a quarrel which had but little interest for them. It was a merciful provision of Providence that these terrible internecine combats were fought entirely by the classes who had from the era of the Conquest made it their business to fight. So that what the men-at-arms drew in the way of wages was mostly booty. Now let us take the Tudor period, or that part of it comprised by Henry VIII.'s reign, multiplying the values by six to get an approximate comparison. The archer had 6*d.* to 8*d.* a day, the mounted archer 14*d.* to 16*d.*, the skewerer or cavalry scout, about the same, and the mounted men-at-arms, or spear, about 18*d.*, the petty captain 2*s.*, and the captain 4*s.* The petty captain had fifty men to look after. Gunners had 12*d.* Henry tried the experiment of paying his troops in Ireland 4*d.* a day, but it was proved to him that they would have to take coyne and livery as well; horse-keep being very expensive. Innkeepers' charges were 2*d.* a day in England about this time. As a rule a mounted man was paid twice the wage of a foot soldier. The board of a yeoman was reckoned in Henry's reign at 3*d.* a day. At this period began the deterioration of the army; practically it did not exist from now till the Commonwealth period. As a fighting machine no one dreams of comparing it with a feudal army, though the English soldier won fame under every flag but his own. Now let us step on a hundred years and take Cromwell's army, which was of good material and well paid—on paper, if we multiply by three to bring it

to our modern reckoning. A private (1644) had 8*d.*, a dragoon 1*s.* 6*d.*, and a trooper 2*s.* In the field 1*d.*, 2*d.*, and 3*d.* was added to these three classes, and the same amount again, as "billet-money." But in one of the last years of the campaign pay was nearly doubled owing to the rise in the price of wheat. But though Parliament was better off than the king, the latter, on the whole, by hook or by crook, was able to pay his soldiers better. But the reasons for this are too various to mention here. The agricultural labourer's wages were rather more than the private's pay. The officers have now assumed their modern titles. A colonel got £1 a day, a lieutenant-colonel 15*s.*, a major 13*s.*, a captain 8*s.*, a lieutenant 4*s.* (these we may compare to the captain and petty captain of the former era), and an ensign had 3*s.* The horse were paid about a third more and drew also, colonel, major, and captain 2*s.* a-piece for six horses, and subalterns at the same rate for four and two horses. Now the provision for the sick and wounded in the sixteenth century was not enough; it did not exist, in fact. The provision at home in time of peace for even the king's servants when ill was admittedly inadequate. In Cromwell's time, however, 4*s.* a week was the hospital allowance, and pensions of 4*s.* to 8*s.* a week were granted, though the soldier was generally left to the care of the parish. Formally no provision was made for him and he turned robber, though specially good service was rewarded by grants, by pensions of 2*d.* a day (in Henry VIII.'s time equivalent to a board wage). In Plantagenet times and in Tudor times grants of land or offices at Court rewarded the good knight, and the great Parliamentary leaders had grants which we may fairly compare with the £50,000 granted to a living general for an excessively arduous and successfully organised campaign. Blood money (£100) was given to a man who lost both eyes at Marston Moor. After Worcester fight (1651) a captain's widow got £200, and a private's £20. On the whole, the army of the Parliament was well paid. All that the private soldier can say to-day is that his pay if poor is punctual, and that he gets a pension.

M. C.