## SOIL SCIENTISTS SET STAGE FOR D-DAY

THE science of soil physics played a part in the invasion of Europe.

Ever since it became evident that the the effect of fertilisers upon crops depended to a large extent upon the physical structure of the soil in which the crops are grown, agricultural chemists have given much attention to the problem. For some time past the physical and chemical departments of Rothamsted Experimental Station in Herts have been engaged on the examination of soil structure, particular attention being paid to the clay fraction of the soil.

Little did the workers on this piece of pure agricultural research imagine that the data and experience they were accumulating would provide valuable information for that epic invasion of Europe on "D" day.

It all began with air reconnaissance photographs of a Normandy beach, taken as part of an investigation to ascertain how the beach would stand up to the heavy traffic of a landing in strength.

With the information provided by this and other methods, geologists selected in England a beach that corresponded as closely as possible with the one in Nor-mandy. To this beach went allied military authorities and scientists, including a soil

physicist from Rothamsted.

There they watched the movements of tanks and other vehicles and mapped the clayey patches in which the vehicles got stuck. At the same time the soil physicist was making a soil survey, and comparing vehicle performance with the characteris-tics of his soil samples. The military authorities then decided that a similar soil survey must be made on the Normandy beach.

An officer was then selected to make the dangerous trip to Normandy. He was shown how to make a rapid survey, how to take the soil samples, and how to distinguish areas suitable for vehicles from which might be unsafe, the point being that samples need only be brought back from what seemed to be unsafe areas.

To make quite certain that he knew his "part" a rehearsal was arranged on the English coast. Patrols were put out in the same way as the enemy would on the Channel coast, and on a starlit night a figure clad in a rubber suit slipped quietly overboard from a boat out in the bay. It was the reconnoitring officer. Silently he made his way through the water and came cautiously ashore. Unseen he took his samples and got clear away.

In due course, his report, together with his samples of clay, reached the military authorities. The information he gave tallied with that already known. The re-

hearsal had been a success.

Here, as far as the soil scientists were concerned the story ended. When the real trip was to be made they did not know. But one day a two-word telephone massage was received-"No samples." And they knew the beach was safe.—Parks & Sports Grounds, London.

## A Letter From Bud Ward

Capt. M. H. (Bud) Ward, who's with a fighter wing of the Army Air Force in

the Pacific, writes:

"Just finished reading your November Esquire Sports Poll on the golfing future of pros in the service. I'm writing this just as though you and I were bending elbows at Tam.

"The article makes interesting reading, but I think the boys are kidding themselves about one angle of the effect of war service on golf. When the boys are stationed in the States I'll lay money they are playing better than before. In the first place they don't get over-golfed.

"I enlisted in December, 1941, and I won plenty of tournaments while I was in the States because I was playing just the amount I wanted to. Remember Tam in '42? I never played better in my life. Believe it or not, I was eight shots ahead of Nelson on my match rounds.

"The proof of the pudding is Snead, who wins in tournament golf right off the bat. He didn't get out of practice or over-

golfed at San Diego.

"As far as Army physical training helping golf, that's the bunk. The only thing that helps golf games is golf. I worked a year in P. T. for the best in the country, Burt De Groot, and I was in the best shape of my life-but not for golf.

"What does a golfer need? Nerves? Three years in New Guinea, Wakde Biak, Sansapore, Palau, and the Philippines, aren't going to rest them. Fire, flying, mud, rain, malaria, dysentery, dengue, and tent life doesn't build a guy up for golf tournaments. One and two pills a day to combat diseases that turn you as yellow as a Jap's back aren't building up golf

"What a guy would give for a steak, milk or vegetables over here! The guys from overseas may win a few tournaments after the war but it will be by sheer guts, and brother, they've got plenty of those.

"To sum it up; the golfers out of the Army and Navy will perform according to where they were stationed and the life they led in service. I don't think the returning GI will give a damn who wins the tournaments. He'll be too busy trying to grab some happiness—and a job.