inventions of English-speaking people. The bicycle and the aeroplane were devised on the soil of Britain.

It was Faraday, they should be made to confess, who laid the basis of electromagnetics, and therefore the foundations of that amazing industrial application of electricity as a mode of motion. It was Davy who showed the elemental character of the alkaline metals —a discovery of the greatest moment. They must be made to realise that Boyle, Cavendish, Watt, Stephenson, Leslie, Hutton, and Lyell, as well as John Hunter, Jenner, Simpson, and Lister, were Britons who made discoveries of the first importance. They must be forced to confess the supreme character of the work of Napier, the Herschels, Adams, Clerk-Maxwell, and Kelvin. We, on our part, always acknowledge the indebtedness of science to such Germans as Mayer, Helmholtz, and Ehrlich; whereas our enemies systematically conceal their immense indebtedness for the enunciation of first principles to men of the English-speaking race.

In regard to the splendid contributions to science of every kind made by the Italians and the French, the representatives of those nations must draw up their own lists, and they will not be short ones. The names they must contain suggest cardinal discoveries in every field of natural knowledge. It would be tedious to revert to the Italian Renaissance, because the names of the men of that epoch have become well known to anyone who knows anything at all of the story of the progress of science.

Eustachius, Malpighius, Borelli, Spallanzani, Galvani, Volta, and Avogadro in Italy; Lavoisier, Laplace, Lagrange, Montgolfier, Cuvier, Lamarck, Claude Bernard, Chevreul, and Pasteur in France, are names writ large in letters of gold across the azure of the firmament of European science. Not one of the following is German: Vesalius, Van't Hoff, Arrhenius, Helmont, Boerhaave, Mendeléeff, the Curies, Metchnikoff, and Pavlov.

Are the Germans grateful to us for what we have done in science? Do they realise, when they use railroads and steamers, dynamos and telephones, that they are all of British origination? They realise nothing of the kind. Not only are they not grateful for the benefits conferred on them by British science, but they have entered into a conspiracy of silence with regard to them.

Let us never forget that it was a German professor of physics who deliberately declared that German aircraft must destroy the tombs of Newton and of Faraday. He also included the tomb of Shakespeare, which was highly inconsistent with the widespread academic delusion that our and the world's greatest poet was a German.

D. FRASER HARRIS.

Halifax, Nova Scotia, September 30.

The Spectrum of Hydrogen.

THE writer has examined the four-line spectrum of hydrogen as produced in Geissler tubes with a 1 mm. capillary by alternating current of 15 milliamperes without inductance or capacity. The light was analysed by a glass prism monochromator, and the intensities measured by a photo-electric cell of quartz containing rubidium in an atmosphere of helium. The cell was calibrated in absolute units by a carbon filament lamp the energy distribution of which in different wave-lengths is that of a grey body in the visible spectrum.

The energy ratios of H_α, H_β, H_γ, H_δ were found to remain constant when the pressure exceeded three or four millimetres of mercury. At lower pressures the relative intensities of the lines of shorter wave-lengths increased. The effect is visually obvious in water-vapour which suppresses the many-line spectrum; this spectrum masks the effect when pure dry hydrogen is used.

The results lead to the conclusions that the four-line spectrum is due to the recombination of a $+H$ ion with an electron; that the method of ionisation of the H atom has no effect on the distribution of intensities, but that the mean free path of the luminous atom and the nature of the atoms with which it collides give a sufficient explanation of the intensity changes observed.

According to Bohr's theory, the mean free path of a luminous hydrogen atom should be shorter as the emitted wave-length decreases. The distance travelled by the atom while luminous may be called the length of the luminous streak, and at high pressures this exceeds the mean free path of the luminous atom for all wave-lengths, so that a change in pressure affects all lines in the same proportion. As the pressure is lowered, however, the mean free path will eventually exceed the length of the luminous streak for H_α, while remaining less for H_β, and so the ratio $H_\beta \div H_\alpha$ may be expected to increase, as is actually observed. At still lower pressures the intensity ratios should approach a constant value when all the mean free paths are greater than the corresponding luminous streaks.

Observation of such ratios will give the relative energies in different wave-lengths emitted by the hydrogen atom when undisturbed by collisions, and experiments of this kind are in progress.

A full account of this work will be published shortly.

R. T. BEATTY.

Queen's University, Belfast, October 18.

Origin of the Word "Blizzard."

THERE have been a number of communications on the earliest use of the word "blizzard," but thus far there has been no suggestion as to its origin. At first sight perhaps it might seem unlikely that the name of some objectionable person was adopted to describe the extremely disagreeable features of the north-westerly snowstorm of the States. We have, however, "boycott" and other words added to our vocabulary with just as much justification as the old settlers in the West would have had for introducing "blizzard."

In Amersham churchyard there is a tomb (now collapsing into the grave) of the Blizard family (Otto Bajer), and to this day, at the neighbouring village of Chalfont St. Giles, there resides a Blizard family. We are here in the heart of the Penn country, the Home of America. It seems highly probable that one or more members of the Blizard family of Buckinghamshire emigrated with the earliest settlers, and it needs no great stretch of the imagination to realise how the name could have been adopted in the slightly altered form "blizzard." I offer the suggestion to the world-wide readers of NATURE.

HY. HARRIES.

Meteorological Office, South Kensington,
October 24.

"PREPAREDNESS": THE AMERICAN WAY.

THE problem of organising a nation for war has had to be faced and partially solved by this country during the act of war. The war has led the Americans to tackle the same problem, with the advantage that they are at peace and at leisure to study it scientifically, with all our mistakes and their own difficulties in the supply