$r = +0{\cdot}15$. All the above values of μ are within the limits of $60{\cdot}10''$ and $60{\cdot}22''$. The corresponding values of n are 1·0002915 and 1·0002921, the range of variation being only 6×10^{-7}. The mean of n for $\pi = 0$ mm. is 1·00029208, that given by Tilton being 1·00029237. These values agree well considering that this latter is referred to the D line while in the astronomical observations the bisections of a stellar spectrum are usually made between C and D lines.

Comparing the values of n, as given in Tilton's note and in Landolt-Börnstein's Tables (from 1877 to the present time), with the corresponding sunspot numbers (s) we obtain on the average :

s	n
12	1·0002925
26	26
44	24
64	25
78	24

which, contrary to Tilton's results, does not show any observational evidence of the dependence between n and s.

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[1] NATURE, **132**, 855, Dec. 2, 1933.

The Scientific Approach to Peace

WE welcome the leading article in NATURE of November 17, on "The Scientific Approach to Peace", indicating as it does the growing realisation of the special importance of the attitude of scientific workers to war, but we cannot agree with the assertion that the 'realistic' attitude of Prof. Huxley represents the point of view of the majority of scientific workers. In Cambridge alone there are some eighty scientist members of the anti-war movement who adopt a fundamentally different attitude. That we are not alone is shown by Prof. K. T. Compton's article[1] and the talk on the causes of war which was to have been broadcast by Prof. J. B. S. Haldane[2] and which, unfortunately, was not permitted.

At the present time it is clearly out of the question to expect individual scientific workers to cease doing war research, but this could be brought about, as NATURE points out, if they were organised in a powerful professional body. An organisation of scientific workers and other intellectuals in France has already developed in the Comité de Vigilance, which is exerting itself in every direction to prevent another war. Similar activity, which is severely repressed by authority, is being carried on in the United States of America, Germany and Italy. An International Congress of these and similar bodies is being held in Geneva on December 29–31, and it is of the greatest importance that British men of science should co-operate by sending delegates, and by helping financially the delegates from Germany and Italy.

C. B. O. MOHR.
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Cavendish Laboratory and
Dept. of Mineralogy and Petrology,
Cambridge. Nov. 17.

[1] *Technology Review*, **36**, 295.
[2] *Daily Herald*, Nov. 3, 1934.

Points from the Foregoing Letters

PROF. INGOLD and his co-workers have shown that an exchange of hydrogen atoms can take place between benzene and sulphuric acid, the latter containing heavy hydrogen atoms as indicator. Prof. Polanyi and Dr. J. Horiuti suggest as a general mechanism for hydrogen exchange in unsaturated compounds, the addition and subsequent elimination of water, or other simple hydrogen-containing molecule. Prof. Ingold and his co-workers admit this mechanism in the case of ordinary unsaturated compounds, but with benzene they assume the addition and subsequent elimination of sulphuric acid, the molecules of which are rearranged ('polarised') in the process.

The 'afterglow' of gases following an explosive reaction has been attributed by Prof. David to the presence of excited or metastable molecules like those formed by an electric discharge in a vacuum tube. Prof. David assumes, apart from the usual heat energy, a 'latent energy' of excitation which may amount to 20 per cent of the total. Messrs. Egerton and Ubbelohde agree to the existence of metastable molecules, but believe the energy associated with these to be considerably less.

Prof. Dhar and Mr. Bhargava bring new evidence that light passing through reacting gases is absorbed to a greater extent than by those gases separately. They suggest, further, that the increased absorption of light is a measure of chemical reactivity.

Messrs. Brindley and Spiers show that powdered copper obtained by chemical precipitation scatters X-rays (of wave-length comparable with its absorption edge) more nearly in accordance with theoretical expectations, than do copper filings, the crystalline structure of which is presumably distorted.

Dr. Sirkar describes the Raman spectrum (scattering of light accompanied by change in wave-length) of benzene vapour and points out that it accords with the theory of Placzek and Teller, while the Raman spectrum for liquid benzene does not. The Raman spectrum has already yielded valuable information concerning the structure of organic compounds.

On passing a weak electric current through nitrogen at low pressure, Mr. Hamada has observed three new bands in the violet (4165·9 A.), blue (4432·3 A.) and bluish-green (4728·5 A.) regions. He suggests that the first two might be identified with similar light in the spectra of the night sky, and perhaps also of the aurora.

By means of an electric discharge in a cooled hollow cathode, Dr. Tolansky has obtained more details in the arc and spark spectra of iodine, which enable him to calculate more accurately the nuclear spin of iodine, a constant which plays an important part in determining the probability of atomic transmutation when the nucleus is hit by another particle.

Mr. L. W. Tilton claimed to have found a correlation between the number of sunspots and the index of refraction of air, from analyses of data since 1912. Mr. Dneprovsky, director of the Pulkovo Observatory, taking into consideration values available since 1877, and also data calculated from the astronomical measurements of the 'refraction constant', maintains that no such correlation can be inferred.