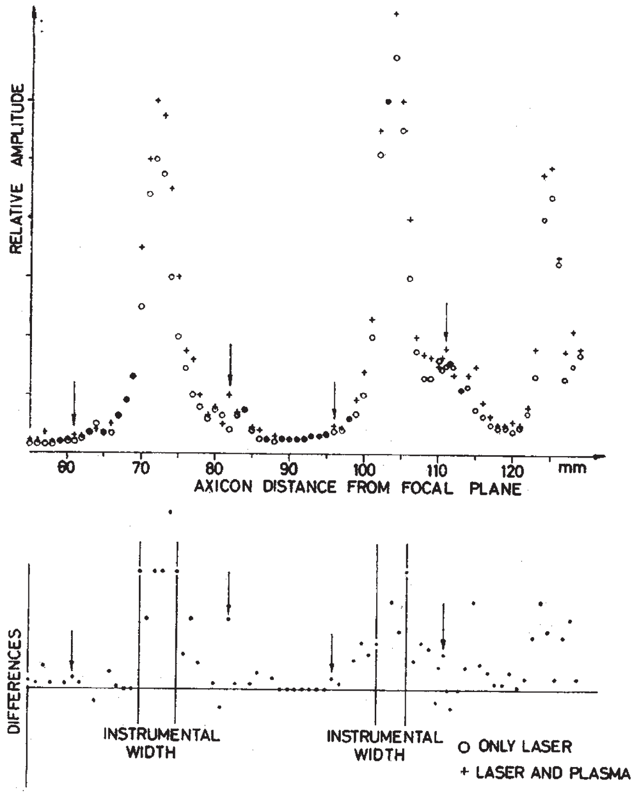

Fig. 2. Spectrum of scattered light at low-resolution etalon free spectral range 30 Å

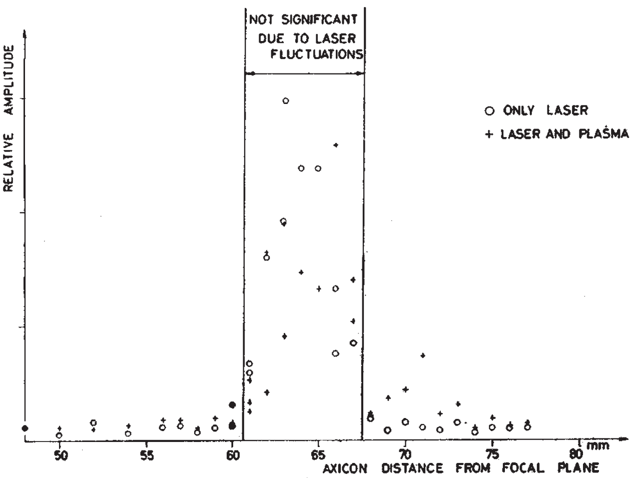

Fig. 3. Spectrum of scattered light at high-resolution etalon-free spectral range 0·8 Å

not sufficient to give a false indication of the displaced ion peak, however, because with the axicon set to accept such a large frequency shift the large-amplitude signal occurred only in the presence of plasma.

If one neglects any thermal correction to the electron satellites the resulting electron density from the frequency shift is $3{\cdot}2 \times 10^{15}/cm^3$. This agrees with the value of $2{\cdot}4 \times 10^{15}/cm^3$ deduced from the total scattered intensity. Setting the displacement of the ion peak equal to the ion thermal Doppler shift gives an ion temperature of 70 eV. If we assume the electron temperature is equal to the ion temperature the resulting value of α for our scattering angle of 3° is ~ 2. Except for the asymmetries toward shorter wave-lengths these data are consistent with the theory and the expected behaviour of a small θ-pinch. The asymmetry in the ion peak can be attributed to an electron drift velocity relative to the ions of the order of the thermal velocity according to the previously cited work of Rosenbluth and Rostoker. Such a drift could also account for the enhancement of the short wave-length electron satellite.

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Attenuating Blast Waves produced by an Instantaneous Release of Thermal Energy

It has been observed that, when an explosive charge of TNT is intimately surrounded by a light crushable porous solid of large surface area and high heat capacity, the subsequent blast wave is rapidly attenuated. The mechanism of attenuation is hazarded as mainly heat transfer. The crushable nature of the surrounding porous solid (no elasticity–zero velocity of sound) would prevent immediate transmission of the blast wave energy and allow time for multiple reflexions, hence heat transfer and therefore attenuation, as gas flow is established through the porous solid.

Although a large number of materials would be suitable as the attenuating medium, initial experimentation has been confined to exfoliated mica, that is, vermiculite. The advantages of this material are its almost insignificant cost and its chemical inertness.

Experience has indicated that the use of vermiculite is a very convenient laboratory tool. A charge of TNT weighing 1/3 lb. can be detonated at the centre of a simple wooden box (4 ft. × 4 ft. × 4 ft.), filled with vermiculite, with complete safety. In fact very little audible signal is received outside the box.

Extrapolation emphasizes the possibility of obscuring the detonation of some 1,000 tons of TNT in a pile of vermiculite of the order of 100 ft. in height. The attenuating mechanism becomes more effective the higher the temperature of the explosive source.

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GEOLOGY

Gibbsite in Altered Granitic Rock in North Wales

My attention was directed by the Nature Conservancy's chief warden for Snowdonia, Mr. Evan Roberts, to an unusual form of rock weathering on the ridge of Y Llymll-wyd, which projects into Nant Ffrancon between Cwm Cywion and Cwm Coch. These are two well-developed late-glacial corries. The rock in question is exposed over an area of about 100 sq. m. in a col on the crest of the ridge at approximately 750 m (2,450 ft.), *O.D.*, grid reference *SH* 631609.