The velocity has been determined for four frequencies, as outlined in the accompanying table.

ULTRASONIC VELOCITIES OF POTASSIUM CHLORIDE SOLUTIONS AT 24° C.

Percentage of potass. chloride	2·5 Mc./s.		2·25 Mc./s.		1·25 Mc./s.		0·625 Mc./s.	
	θ_l	V_l	θ_l	V_l	θ_l	V_l	θ_l	V_l
1	57·0°	1·692	57·2°	1·680	56·1°	1·660	55·6°	1·650
2	57·1°	1·659	54·6°	1·629	53·8°	1·615	53·2°	1·602
3	59·4°	1·720	56·1°	1·660	55·1°	1·640	54·3°	1·625
4	57·4°	1·684	58·8°	1·710	66·2°	1·830	67·7°	1·849
5	69·7°	1·876	68·9°	1·866	67·9°	1·853	66·5°	1·834
6	69·6°	1·875	67·7°	1·850	66·7°	1·836	64·7°	1·808
7	66·2°	1·830	65·1°	1·814	63·9°	1·796	62·9°	1·780
8	63·9°	1·795	63·4°	1·788	62·4°	1·772	61·7°	1·760
9	62·7°	1·776	62·1°	1·768	61·3°	1·754	60·7°	1·744
10	61·8°	1·763	60·7°	1·744	60·0°	1·732	59·7°	1·726

It will be seen from the results in the table and from the graph that the ultrasonic velocities show anomalous behaviour in the region of negative viscosity (1–6 per cent solution); hence, it may be useful to correlate the ultrasonic velocity data, or in other words the compressibility data, of electrolyte solutions with the negative viscosity.

SATYA PRAKASH
PREM NATH SAXENA
ARVIND MOHAN SRIVASTAVA

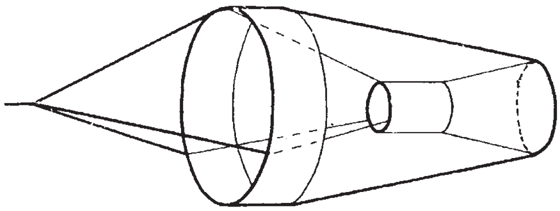
Chemical Laboratories,
University of Allahabad,
Allahabad.
May 5.

[1] Poiseuille, *Ann. Chem. Phys.*, **21**, 76 (1847).
[2] Hubener, *Pogg. Ann.*, **150**, 248 (1878).
[3] Sprüng, A., *Pogg. Ann.*, **159**, 1 (1876).
[4] Slotte, K., *Weid. Ann.*, **20**, 257 (1883).
[5] Gibson, *J. Amer. Chem. Soc.*, **57**, 284 (1935).
[6] Falkenhagen, H., and Bachem, *Chem. Nat.*, **135**, 830 (1935); *Z. Elektrochem.*, **41**, 570 (1935).
[7] Szalay, A., *Phys. Z.*, **35**, 639 (1934).
[8] Srivastava, A. M., *Proc. Nat. Acad. Ind.*, **18**, 51 (1949).

A High-speed Tow-net

IN order to investigate the changes in the distribution of young fish in the Clyde sea area it was necessary to obtain on each of a series of dates numerous samples of the population over a large area. To cover this area it was necessary for the research vessel to travel at full speed for as much as possible of the time available. This precluded the use of conventional tow-nets or trawls at set stations. Further, an apparatus like the Hardy plankton recorder would filter too small a volume of water to catch a significant number of young fish. Sheard[1] has described a net which appeared to be of the type required, in which the bucket is dispensed with and the tail of the net fliped (turned in on itself).

An ordinary plankton net was modified on this plan. The dimensions of the original net were: diameter of mouth 46 cm., calico collar 15 cm. long, silk (26 meshes per inch) 94 cm. long, bucket-sleeve 12 cm. in diameter and 17 cm. long. A metal ring was sewn into the end of the sleeve and three toggled bridles 42 cm. long attached to this ring. The tail of the net was fliped and the three toggles passed through the eye-splices of the main bridles of the net, as shown in the diagram. The bridles were shackled to a spring hank rove a fathom and a half above a cable depressor[2], on the trawl warp, and trials showed that it could be towed successfully at speeds of at least 7 knots. The general performance of the gear was found to be very satisfactory; there was



no inclination to yaw and no frontal wave was observed.

By towing two such nets alternately, for four miles at a time, 5 m. below the surface, it has been possible to obtain samples continuously along the course of a 68-mile cruise. At the time of writing, each of the two nets employed has been towed for more than 160 miles without signs of undue strain. The catches which have already been obtained and analysed contained thirty-seven species, including up to 250,000 *Calanus* and 3,000 fish eggs per haul, sprats of up to 9 cm. in length and a wide variety of post-larval fish. Although more of these organisms were damaged than is usual in a normal tow-net catch, all but a few were easily identifiable, and indeed the majority of the catch was still alive when brought on board. Tests of the efficiency of the nets are in hand, and preliminary results indicate that their catching power is closely comparable with that of a tow-net of conventional design. Nets of various diameters and mesh sizes are also being tested, and the possibility of fishing at greater depths investigated.

D. T. GAULD
T. B. BAGENAL

The Marine Station,
Millport. May 7.

[1] Sheard, K., *Rec. S. Aust. Mus.*, **7**, 11 (1941).
[2] Barnes, H., *J. du Conseil Explor. Mer.*, **17**, 133 (1951).

Beet Yellows Virus

SEVERAL plant viruses have been found to occur as elongated particles of variable length and 10–15 mμ in width. Leyon[1] has published electron micrographs showing such rod-like particles with a width of about 10 mμ in sap from plants infected with beet yellows virus and in the specific precipitates produced by mixing the sap with its antiserum. We have also found rods in these two kinds of preparation. They do not occur in sap from healthy beet plants, and by analogy with other viruses which have been purified it could readily be assumed that the rods are the virus particles themselves. There are, however, other factors which make this assumption less tenable and suggest that the rods are not the only anomalous component in sap from infected plants.

With the appropriate antiserum, clarified sap from sugar beet plants infected with beet yellows virus gives specific precipitates that appear to be of the somatic type. Their precise character is difficult to determine when working with unfractionated material; but the general behaviour in precipitin tests resembles that of viruses with spherical rather than rod-shaped particles. Precipitates are obtained up to dilutions of 1/64, which by analogy with bushy stunt virus would suggest a specific antigen of concentration about 100 mgm./l.[2,3]. By contrast, only a few rod-like particles can be seen in electron microscope mounts made from clarified sap; and although the concentration cannot be determined accurately, it seems unlikely that it exceeds 1 mgm./l.[3]. It appears,