theory. If B_0 and R_0 refer to room temperature and B and R are measured at any other temperature, we have from (3)

$$B_0 = B\left(\frac{R}{R_0}\right)^2. \quad . \quad . \quad . \quad . \quad (4)$$

The two last columns of the accompanying table are calculated according to (4) and show a good agreement

VARIATION OF B WITH TEMPERATURE.

	Kapitza's observations at the temp. of:				$B \times 10^{12}$ at room temperature.		
	CO_2 + ether.		Liquid nitrogen.		Obs. by Kapitza.	Deduced by Equ. (4) from experiments at temp. of:	
	$B \times 10^{12}$.	R/R_0.	$B \times 10^{12}$.	R/R_0.		CO_2 + ether.	Liquid nitrogen.
Mg	4·9	0·68	55	0·17	2·15	2·25	1·6
Zn	1·87	0·68	19·7	0·19	—	0·87	0·72
Cd	6·6	0·68	33	0·22	—	3·0	1·6
Mo	1·28	0·61	15·4	0·136	—	0·46	0·29
Be	—	—	40·4	0·33	9·8	—	4·4
Ga	25	0·65	174	0·21	—	10·3	7·8
As	50	0·6	470	0·16	16·4	18	12

between each other and the directly observed value of B_0 given in the preceding column.

H. BETHE.

Cambridge.

[1] For the theoretical explanation of the deviation from this law for strong fields observed by Kapitza (*Proc. Roy. Soc.*, A, **123**, 292; 1929) see N. H. Frank, *Zeit. f. Physik*, **63**, 596; 1930.
[2] Leipziger Vorträge, 1930, p. 75, see specially p. 85.
[3] *Zeit. f. Physik*, **47**, 1; 1928.
[4] See Sommerfeld, l.c., equations (77*a*), (34), (42*a*), (48*c*). Our E_0 is Sommerfeld's kT' log A, n is the number of electrons per cm.^{3} of the metal.

Faraday's First Successful Experiment on Diamagnetism.

IN my discourse on "Tyndall's Experiments on Magne-crystallic Action", delivered at the Royal Institution on Friday, Jan. 21, 1927, and published as a supplement to NATURE of May 7 of that year, I gave a short account of Faraday's first successful experiment on diamagnetism. He used a piece of heavy glass which he described in his Diary as No. 174. At that time I searched through all the specimens of Faraday's heavy glass in the Royal Institution but was unable to find it. It has just turned up, being contained in a box which Mrs. Tyndall has most kindly allowed me to examine.

The box was presented to Prof. and Mrs. Tyndall by Faraday, and it contains a number of specimens which the latter used in this series of diamagnetic experiments. This piece of glass is actually the first object in which Faraday found diamagnetism to be shown.

Mrs. Tyndall has kindly promised that the box and its contents shall be on show at the Faraday Centenary Exhibition in the Albert Hall next September.

W. H. BRAGG.

The Royal Institution,
21 Albemarle Street,
London, W.1, Feb. 17.

Cambridge Expedition to the East African Lakes.

THE expedition, which is being financed by scientific societies and the University, left England in October and is at work on the rift valley lakes of Kenya. The object of the expedition is twofold: First, to continue studies on the ecology of the East African lakes which were started by the Government fishing surveys of Lakes Victoria, Albert, and Kioga in 1927–28, and at the same time to make thorough collections of the faunas of Lakes Rudolf, Baringo, and Edward, which have previously received only a cursory scientific examination; secondly, by studying the old lake beaches and deposits, to continue farther north the investigations made around Lakes Nakuru, Elmenteita, and Naivasha by Mr. L. S. B. Leakey and the biologists of the East African Archæological Expedition. It is hoped to link up evidence from lake beaches, the distribution of the present lake faunas, and the chemical constitution of the waters into a unified whole, and so to work out, so far as possible, the previous distribution of land and water during the pluvial periods.

The personnel of the expedition consists of Dr. E. B. Worthington (leader), Mr. L. C. Beadle, whose special study is that of the chemical constitution of the waters and its relation to the fauna and flora, and Mr. V. E. Fuchs, geologist, who is concentrating on the old lake beaches. In addition, through the collaboration of the Kenya Government, Capt. R. E. Dent, assistant game-warden, has accompanied the expedition, giving invaluable assistance in many ways.

The first two months have been devoted to a preliminary examination of Lakes Naivasha, Baringo, and Rudolf, and to fixing camp sites and transporting boats to the lakes in readiness for future work. Lake Rudolf lies far to the north, extending beyond the Kenya-Abyssinia border. Some difficulty was experienced in transporting the equipment and a 20-foot metal life-boat, lent to the expedition by the railway authorities, the 260 miles beyond the railhead to the lake. This is the second boat to have reached Lake Rudolf; the first having been lost some years ago, soon after her first cruise. The lake is low-lying in a wide desert area, so that the climate is hot, the daily shade temperature reaching 100° F. Living under canvas is uncomfortable owing to the heat, the bad water, and the high winds prevailing. Consequently a hut has been constructed out of local materials to afford protection and to serve as a laboratory.

All three lakes lie in closed drainage basins, and there is no previous information about their depths, except that of Naivasha. This lake, at 6200 ft. above sea-level, has an area of 60 square miles and a maximum depth of 20 metres. Baringo, at 3000 ft., has an area of some 50 square miles, and its floor proves to be silted up to an almost even depth of 7 metres. Lake Rudolf, a tract of water 180 miles long by some 30 miles wide, lies at 1400 ft. above the sea. The deepest sounding yet made is 63 metres near the middle of the lake; this shows that Rudolf, though a true rift valley lake, is of the shallow type. By comparison with the lakes of the western rift it resembles Lake Albert, depth 47 metres, rather than Lake Tanganyika, depth 1435 metres, or Lake Nyassa, 786 metres.

Lakes Naivasha, Baringo, and Rudolf are alkaline owing to soda derived from the lavas of the rift valley. The water of Naivasha has an alkalinity of 0·003 normal, of Baringo 0·005 *N.*, whereas Lake Rudolf consists of a strong solution of soda with a normality of 0·023. In the latter lake the concentration of soda salts due to evaporation and the recent lowering of the lake level have caused precipitation of lime from the water. This can be associated with the deposition of calcareous tufa some distance above present lake level, and also must have had its effect on the constitution of the lake fauna.

Concerning the faunas, Lake Naivasha, having a single small indigenous fish, *Haplochilus antinorii*, and lying in a populated area, has for the last five years been the seat of an experiment on the introduction of other fishes for commercial and sporting purposes. This must have altered the ecology considerably, and it may have caused the extermination of some small members of the invertebrate fauna. The present