15, 189, 1923), it has been possible to calculate the greater part of these resolution patterns from the corrected term-scheme. The observations agree completely with the calculations on the assumption that the ordinary formula for the " separation factor " g of Landé is valid.

The observations of a few other lines make it not improbable, however, that there may be some terms for which the ordinary formula does not apply. It follows also, from some earlier observations of Rybar (*Physik. Zeit.*, 12, 889, 1911) on the related triplet spectrum of lanthanum, that terms with ordinary resolution and terms with unusual resolution are both present.

According to Landé (*Zeit. f. Phys.*, 17, 292, 1923) the ordinary g-formula is only valid if in the atomic rest—that is, the atom without the emitting electron—the electrons of the groups with azimuthal quantum numbers greater than one form closed configurations without moment of momentum.

The neutral scandium atom contains, according to Bohr, one single 3_3-electron. The observed separation patterns show that this single 3_3-electron generally cannot be present in the atomic rest of the excited scandium atom, for it cannot be arranged in a closed configuration. Therefore, it must be the emitting electron. The term-scheme really shows that the lowest energy level is a d-term, and this is also confirmed by the absorption experiments of Gieseler and Grotrian (*l.c.*). In the ionised scandium atom, there is no 3_3-electron at all, or it must be also in this case the emitting electron. The lowest energy level of Sc II. is not yet known.

It should be noted, however, that the facts obtained with the spectra of vanadium and titanium (Gieseler and Grotrian, *l.c.*) show that the term-type determined by means of the term structure and the magnetic resolution is not always (perhaps through the simultaneous action of different outer electrons) the one we expect according to the known atomic structure. It may be possible that something of this kind also happens here.

S. GOUDSMIT.
P. ZEEMAN.

Amsterdam, August 20.

Congenital Eye Anomalies in Albino Mice.

IN papers published in the *Journal of Experimental Zoology* (vol. xxvi., 1918, p. 65, and xxxi., 1920, p. 171) Guyer and Smith have given an account of the transmission, through successive generations, of eye defects which occurred in the offspring of rabbits and mice treated, while pregnant, with lens-sensitised fowl serum. The greater part of the papers concerns experiments carried out with albino rabbits, and in their case alone was the question of heredity considered, but the nature of the defects in both cases appears to have been the same.

Among a large number of albino white mice which are being bred in this Laboratory, a few have appeared recently with abnormal eyes. These have arisen in the course of ordinary breeding. The eyes follow in appearance the description given by Guyer and Smith; they are sometimes reduced in size, and one or both lenses are opaque, so that they are of a colourless, glassy hue instead of the normal red of the albino. So far the abnormality has been noticed in about 1½ per cent. of the mice that have been dealt with, and while it is at present too early to assert that the defect is definitely hereditary, the evidence available suggests that this is so.

I should be very interested to hear whether any others who have been breeding mice have observed this same abnormality. Guyer and Smith could obtain no information from breeders of similar defects arising naturally in *rabbits*, and concluded that " rabbits are stable forms wholly unlikely to develop eye defects unless, as in our work, these have been deliberately induced by the experimenter." It would appear that as regards albino mice, outwardly similar defects may arise without being deliberately induced, which seems to be a fact of some importance having regard to the bearing of Guyer and Smith's experiments on the problem of the inheritance of acquired characters.

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The Stark Effect on Fundamental (Bergman) Series.

ACCORDING to the Bohr theory, we should expect that the Stark effect would be strong in the fundamental (Bergman) series. So far as I am aware, the experimental evidence has not been brought forward, as the lines belonging to this series usually appear in the infra-red region. In a paper published by Saunders (*Astrophys. Jour.*, 52, p. 265, 1920) a certain number of calcium lines in the visible and ultra-violet region are ascribed to the fundamental series.

On referring to my previous work with Mr. N. Kokubu (Mem. Coll. of Sci., Kyoto, 3, p. 173, 1918), I find that many of these fundamental series lines are shifted toward the red by an electric field, as shown in the following table.

	Fundamental triplets $(1d)-(mf)$.				Fundamental Singlets $(1D)-(mF)$.		
m	λ in A	Shifts (for E = 68 kilovolt/cm.)		m	λ in A	Shifts (for E = 68 kilovolt/cm.)	
1	4586·1 81·7 78·8	Not measured		1	4878·3	Not measured	
		p-component	s-component			p-component	s-component
2	4098·8	2·7 A	1·2 A	2	4355·4	4·3 A	2·8 A
	95·3	2·3 A	1·5 A				
	92·9	2·2 A	1·4 A				

On meeting Prof. Saunders at Toronto during the sessions of the British Association, he suggested that this fact might be worthy of mention.

T. TAKAMINE.

Photographs of Lightning.

I AM at present engaged in investigating the forms assumed by lightning flashes in different circumstances and for this purpose require to examine as many photographs of lightning as possible. May I appeal to readers of NATURE who have such photographs to be good enough to give me an opportunity of inspecting them? It is not necessary that the photographs should be technically good; any photographs showing the form of the flash will be valuable. I should like especially to see photographs showing flashes from the tops and sides of clouds.

All photographs will be returned, if required, as soon as they have been examined.

G. C. SIMPSON.

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September 10.