when much more delicate detail is quite plain; (2) that they disobey the laws of diffraction; and (3) that they often disobey perspective. Mr. E. W. Maunder, whose wonderful insight led to the theoretical solution of the canal question fifteen years before my observations of 1909, had already pointed out in 1894 that the linear 'canals' appear sometimes unduly straight near the limb of the planet; and I have further given a graphic demonstration of the illusive character of such appearances by the construction of spherical projections. I must continue therefore to refute any attempt to represent, as real lines, markings disobeying natural law, and I wish to express the view that the 'canal' question, in its present stage, is past serious scientific discussion.

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The "H and K" Bands of Carbon.

IN discussing the negative bands of carbon, Deslandres mentions (*Comptes rendus*, 137, p. 460, 1903) the two strong bands λ2883·86 and λ2897·11 which "are very intense, are diffuse on both sides, are of a different structure and otherwise very curious," and suggests that they may probably be due to oxygen. These bands have also been noticed by Prof. Fowler while studying the comet-tail bands, but he makes no mention of them in his papers. He calls them the "H and K" bands of carbon because of their striking resemblance to the two solar lines H and K. In a recent paper Johnson (*Proc. Roy. Soc.*, A, **108**, p. 343, 1925) observes that each of these bands is resolved into two components, and he has allocated two of them to the regular negative band system. This allocation seems to be of a rather doubtful nature, for the structure of these bands is peculiar and they can be obtained alone, unaccompanied by the other members belonging to the same system.

While experimenting on the spectrum of neon under a low pressure, these two bands were prominently obtained on a photograph. The tube contained carbon and oxygen impurities, as was evidenced by the presence of the strong lines belonging to them. The bands were seen only in the uncondensed discharge, and no other bands were to be seen at all. The structure of these bands is remarkable. Each consists of three lines, a central sharp line bounded on each side by a diffuse line, the less refrangible diffuse to the red and the more refrangible diffuse towards the violet. The writer had the opportunity of examining the old plates of Prof. Fowler and verifying the wave-lengths. In those plates, however, the resolution was not sufficient to warrant accurate measurements. The following table gives the wave-lengths of the lines measured on a plate taken with a large Hilger quartz spectrograph that gave a dispersion of about 14 Å.U. per mm. in this region.

Deslandres. λ I.Å.U.	Johnson. λ I.Å.U.		Present Measures. λ I.Å.U.	ν (vac.)
	2897·15	R (3)	2897·23 d.r.	34505·61
2897·00 (10)			2896·25	34517·28
	2895·5	V (4)	2895·35 d.v.	34528·00
	2883·6	R (2)	2883·74 d.r.	34666·97
2883·75 (10)			2882·84	34677·79
	2882·25	V (2)	2881·97 d.v.	34688·26

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The Anomalous Dilatation of Invar.

IN NATURE of November 6, p. 662, Prof. F. Zernike describes an experiment claiming to be a repetition of our dilatation measurements of invar. This experiment, however, presents considerable differences regarding the method and thermal circumstances used as well as the state of the metal.

The wire now used being 0·5 mm. in diameter has a section only 0·09 times the one used by us (diameter 1·65 mm.). Consequently, the time—about 3 minutes—during which the intermedial changes were observed by us (before contraction set in on heating) must have been a considerably reduced one. Further, on account of the wire being heated by the passage of an electric current, this time must be shortened still further. Now, such electric heating—in spite of giving necessarily a definite temperature gradient in a radial direction—may be all right for the later observations; at the very beginning, however, when a rather uniform temperature is indispensable, the temperature distribution along the specimen necessarily is a non-uniform one (say parabolic). This must reduce the intermediate dilatation as observed by us, and render the observation more difficult. The comparatively high stress of about 1 kgm. as applied by Prof. Zernike will also act in the direction of lessening the effect observable.

On the other hand, it is well known that the dilatation properties of a 36 per cent. iron-nickel alloy are dependent to a considerable degree of the thermal and mechanical treatment; it can scarcely be considered as invar when not in the original well-seasoned state. On account of this we deemed it necessary to investigate the ('geodetic') wire in its original state, using merely the heating (to 50°) necessary for the experiment. Prof. Zernike, on the contrary, has examined a wire which after the original treatment had been severely cold-worked, in one case "after annealing at a red heat." After such a treatment the alloy is certainly not strictly comparable to the original invar wire, as used by us.

In these circumstances we cannot consider that the experiments made by Prof. Zernike "in order to repeat" our work, really fulfil this purpose, and we await a repetition more nearly equivalent to our method before taking the work up again.

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Science and the Press.

IN reference to the leading article on "Science and the Press" which appeared in the issue of November 27, it may interest readers of NATURE to know what action has been taken in Glasgow in this connexion. A publicity campaign, under the auspices of the local section of the Institute of Chemistry, has been in operation for the past four years, and during that time 125 articles of column length have been published at regular intervals in the *Glasgow Herald*. These articles deal with the applications of chemistry in a popular fashion, and several have been written at the special request of the editor. The evening papers have also opened their columns, and about 175 short articles have appeared there. The scheme is still in operation and has been eminently successful. The experience of the *Glasgow Herald* may perhaps influence other newspapers to make a special feature of similar popular scientific efforts.

W. M. CUMMING.

The Royal Technical College,
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