strong and producing the afterglow and the other feeble, the gas being led from the former to the latter, the yield of nitrogen peroxide is *greater* with the two discharges than when the stronger is used alone, in spite of the almost complete extinction of the glow by the weaker discharge. Moreover, if the latter be used alone, little or no luminosity is visible in the gas in the exhaust line, but abundant formation of nitrogen peroxide occurs.

It thus appears that the glowing and chemically active forms of nitrogen are distinct from each other, and that the estimates as to the energy of 'active' nitrogen made severally by spectroscopists and Dr. Rideal and myself have really been upon different modifications of this element. The same applies to the respective deductions as to the nature of 'active' nitrogen. While we may now with confidence regard the luminous variety as being due to the recombination of atoms with a heat of formation of *ca.* 250,000 cal./gm. mol., the nature of the other kind, which is apparently the chief constituent of 'active' nitrogen and possesses an energy of *ca.* 45,000 cal./gm. mol. is still somewhat obscure; the choice would appear to lie between metastable molecular nitrogen and a more complex body such as N_3.

A full account of these investigations will shortly be published. E. J. B. WILLEY.

Laboratory of Physical Chemistry,
Cambridge, May 4.

Designation of Thyroxine.

KENDALL (*Proc. Am. Physiol. Soc.*, *Am. Jour. Physiol.*, **45**, 540; 1918) named the crystalline compound he isolated from the thyroid *thyroxin*, as an abbreviation for *thyro-oxy-indole*, since he believed it to contain an indole nucleus. Harington has shown that, on the other hand, it is an iodised amino-acid, derived from tyrosine. He has gracefully accepted Kendall's name, merely adding the final *e* necessary for an amino-acid in English terminology.

Nevertheless, from a teaching point of view, a name that signifies something incorrect is undesirable, in spite of numerous examples that persist (the majority of bio-catalysts do not produce a 'boiling' and do not occur in yeast, and are but clumsily, therefore, termed ferments or enzymes; it is doubtful if the majority of 'hormones' 'arouse').

It seems very desirable that Harington, or, if he refuse, some one of the elder endocrinologists, should find a new name for this internal secretion of the thyroid gland which will more accurately suggest its derivation. I would suggest for their consideration a term such as *thyrosine*, or *thyroisine*, either of which practically retains Kendall's name, and at the same time emphasises both the thyroid origin of the compound and its close relationship with tyrosine, the two points which obviously require emphasis.

May I also suggest that stress should be laid on Harington's opinion (*Biochem. Jour.*, **20**, 298; 1926). "In view of the constitution of thyroxine . . . racemisation during the alkaline hydrolysis (of thyroid tissue) is the probable explanation of the absence of optical activity in the product." It seems, by analogy, extremely unlikely that thyroxine, as secreted by the thyroid gland, should be optically inactive; and further, by comparison with adrenine, we may reasonably infer that one of the two optically active isomers will be physiologically completely, or almost completely, inert. If this should prove to be the case, then commercial thyroxine will have but one-half the activity of thyroxine in thyroid, and an explanation may be available for that discrepancy between the physiological activities of thyroxine and of desiccated thyroid tissue that Reid Hunt found by use of his acetonitrile test with mice (*Am. Jour. Physiol.*, **63**, 257; 1923); my own experiments, utilising growth and organ-hypertrophy effects on rats (*Trans. Roy. Soc. Canada*, **20**, 307; 1926) have supported his conclusion that (*optically inactive*) thyroxine does not represent the full activity of the thyroid gland. A. T. CAMERON.

University of Manitoba,
Winnipeg, Canada, May 25.

The Calibration of Photographic Plates.

IN NATURE (May 14, p. 707) Dr. E. A. Baker discusses the calibration curves of photographic plates. The curves he gives certainly show a good agreement in sensitivity between the different batches of plates used under his conditions of standardisation. Concerning the reference to Harvard results (Harvard Circular 302), it may be of interest to note several points not fully discussed in the original paper on spectrophotometric method.

The curves to which Dr. Baker refers are the density curves of ten of the photographic plates analysed in our regular photometric programme, and are representative of the general results obtained. Intercomparison of the curves allows us to examine the effects of emulsion and developer. Curves for plates taken from the same box show no closer agreement among themselves than do those for different boxes of plates coated with the same emulsion. Even plates with two different emulsions show no greater differences from one another than do plates with the same emulsion.

A similar result is obtained with regard to developer. Plates developed with different batches of one developer agree as well as do those from a single batch of developer, while plates developed with one of the two kinds of developer used at Harvard show an agreement among themselves that is little, if any, closer than the agreement for plates developed with the two different kinds of developer.

The idea of the Harvard individual plate calibration curves, however, was not specifically the elimination of differences in emulsion or developer, though this will of course follow. It was to set up a density curve for the plate used, *for the conditions under which it was exposed*, rather than to ensure the constant sensitivity of different plates under carefully standardised conditions. The calibration curves, as described in Harvard Circular 301, will allow for any possible changes in sensitivity due to the temperature and humidity during exposure in the telescope, to the ageing of the plates, or to delayed development, as well as for any loss of transparency of the background and exposed portions of the plate due to sky fog.

Exact agreement between various reduction curves is not to be expected, nor would it have any significance for the spectrophotometric results. Individual plate calibration is at least a safe procedure until such time as a greater knowledge of, and dependence on, the actions of photographic plates under various conditions is obtainable. FRANK S. HOGG.
CECILIA H. PAYNE.

Harvard College Observatory,
Cambridge, Massachusetts, June 3.

The Spectrum of Ionised Neon (Ne II).

FOR some time the spectrum of ionised neon (Ne II) has been a subject of investigation in the Amsterdam Laboratory "Physica." The analysis of the F I spectrum, given in former papers (*Verslagen Kon. Acad. Amsterdam*, June 1926; December 1926)