an elephant's trunk; while one would have thought that alongside the "trunk" in Figs. 5 and 6 there were represented (in a conventionalised fashion) structures that look like tusks.

In conclusion, I should like to say that Dr. Forbes has certainly rendered a service in giving alternative explanations to some of the *motifs* of primitive American art. I do not agree that any of the figures (except possibly that of the Manabi slab) reveal a *whole* cephalopod, though parts of his Figs. 2 and 7 suggest that the arms may have been employed as incidents in larger designs. I feel, however, that unless we can obtain evidence as to the earlier stages from which this very conventionalised and, I venture to suggest, somewhat debased method of design was evolved, a Proboscidean, a Molluscan, or even a Cœlenterate interpretation will be equally plausible.

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On the Mercury Line λ2270 A.

IT is a remarkable fact that of the three transitions of an electron in a mercury atom represented by $1S-2p_1$, $1S-2p_2$ and $1S-2p_3$, we see optically only $1S-2p_2$ (λ2536), while the other two, namely, $1S-2p_1$ (λ2270) and $1S-2p_3$ (λ2655), have not been observed at all except by the indirect method of measuring the ionisation by impacts of electrons on atoms by Franck and Einsporn (*Zeit. f. Physik*, ii. p. 18, 1920).

In 1922, at the suggestion of Prof. N. Bohr, one of us, in conjunction with Prof. H. M. Hansen and Dr. S. Werner (Kgl. Danske Videnskab. Selskab. Math.-fys. Medd. v. 3, 1923), tried to find how to make possible the transitions from these two meta-stable states $2p_1$ and $2p_2$ to the normal state $1S$.

As a result, we found that the line λ2270 is excited in a Geissler tube when a condensed discharge is passed, whereas the line λ2655 was not detected at all.

In the present experiment, the account of which will be published later in detail, we tried to get the line λ2270, not in the spark spectrum but in the arc spectrum of mercury.

We found that the arrangement used by Messrs. Metcalfe and Venkatesachar (Proc. Roy. Soc. A, 100, p. 149, 1921; A, 105, p. 520, 1924) for the study of the absorption of mercury lines produces the line λ2270 with considerable intensity. Instead of using the long tube filled with mercury vapour as the source of absorption, we employed it for emission, and by passing a current from 2 to 3 amperes through the long tube, which we might call "a branched arc," we found that the intensity of the line λ2270 could be raised so as to come between $m=8$ and $m=9$ in the diffuse series $\nu=2p_2-md_2$. In other words, the line λ2270 appears stronger than λ2303 ($m=9$), but fainter than λ2323 ($m=8$).

Using the largest size of quartz spectrograph made by Hilger (Littrow type), and photographing in juxtaposition the line λ2270, first as excited in the above method, and second as excited in a condensed discharge, we found that the latter method of excitation gives a shift of about 0·1 A to the red side, with a faint companion line on the red side at a distance of about 0·2 A.

Similar shifts were observed for the line λ2345 ($\nu=2p_3-5s$) in the same sense, but in the opposite sense for the line λ2564 ($\nu=2p_2-4S$). The shifts are not due to the manner of projecting the image on the slit, since there are many lines which show perfect coincidence; neither does it seem likely that the shifts are due to the Doppler effect, as they remain the same when we change the polarity of the condensed discharge, which was fairly well rectified.

No trace of the line λ2655 ($\nu=1S-2p_3$) was observed.

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A Rotational "Fatigue" Effect of the Electric Discharge.

IN some recent experiments on the volt-ampere characteristics of low-tension discharge tubes, I utilised an "Osglim" lamp of the "beehive" variety, sealing it on to an apparatus so that air at different pressures could be introduced. (The lamp consists of an iron disc anode and a spiral cathode of thick iron wire, wound above the anode.)

It was observable at certain pressures that, when the discharge was continuous, but failed to cover completely the cathode, the discharge shifted from one part to the other of the cathode surface, often undergoing a regular cycle. At other times the motion was along the wire of the spiral, slowly backwards and forwards through a rotation of up to 120°, and even more. The rotation continued over long periods of time in a most interesting manner.

The phenomenon is apparently an electrode "fatigue" effect. When one portion of the surface has been serving as cathode for some time, it becomes "fatigued," and the value of the cathode fall of potential rises; it then becomes easier for the discharge to pass over at an adjacent portion of the cathode, and consequently the discharge rotates slowly.

That the rotation is accompanied by a corresponding fluctuation of the voltage drop across the tube is evident from the fact that the reading of the voltmeter, across the tube, rises and falls at a similar rate (there is of course a lag), and to a lesser degree variation of the current is observable.

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Armstrong College, Newcastle-upon-Tyne,
August 19, 1924.

Zoological Nomenclature: Generic Names for the Official List.

THE following generic names (with genotype in parentheses) have been submitted to the International Commission on Zoological Nomenclature for inclusion in the official list of generic names.

The Secretary will delay final announcement of the votes on these names until January 1, 1925, in order to give to any zoologists, who may desire, the opportunity to express their opinions.

Amphibia: *Cryptobranchus* Leuck., 1821, 259 (*gigantea=alleganiensis=alleghaniensis*); *Desmognathus* Baird, 1849, 282 (*fuscus*); *Siren* Linn., 1766, addenda (*lacertina*).

Reptilia: *Alligator* Cuv., 1807, 25 (*mississipiensis*); *Calamaria* Boie, 1827, 236 (*calamaria*); *Chelydra* Schweigg., 1812, 292 (*serpentina*); *Crotalus* Linn., 1758a, 214 (*horridus*); *Dermochelys* Blainv., 1816, 119 (*coriacea*); *Eremias* Wieg., 1834, 9 (*velox*); *Lacerta* Linn., 1758a, 200 (*agilis*); *Mabuya* Fitz., 1826, 23 (*sloanii*); *Phrynosoma* Wieg., 1828, 367 (*orbiculare*).

Pisces: *Blennius* Linn., 1758a, 256 (*ocellaris*); *Echeneis* Linn., 1758a, 260 (*naucrates*); *Esox* Linn., 1758a, 313 (*lucius*); *Ophidion* Linn., 1758a, 259 (*barbatum*).

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