

electrodes were measured by means of a high resistance reflecting galvanometer, suitably arranged, with shunt and interposed resistance, for the purpose in hand.

The result of my experiments is to bear out completely the deduction which I had made from Mr. Mortimer Evans' numbers; and to show that the temperature which produces, for example, the appearance of a certain red heat, is very much higher when the surface of the heated body is dulled than when it is bright as in a polished metal. I am not yet prepared to give a definite numerical comparison; but in order to show that the difference of temperatures referred to amounts to many degrees of temperature, I may be allowed to give the following statement.

The two wires being at the same dull red heat, which from previous experience I estimate at perhaps 600° C., in the case of the bright-surfaced wire, the ratio of the resistance of the lamp-blackened platinum to the bright platinum was 130:93. Platins differ very much as to variation of resistance with temperature; but in most specimens the resistance is doubled, when the temperature is raised from 0° C. to a temperature of from 300° C. to 400° C.; and for any particular platinum wire the change in resistance is almost in simple proportion to the change in temperature. From this statement it may be judged that the difference of temperatures between the two platins, dull and bright, when giving out the same light, was a great many degrees centigrade.

The difference of temperatures of the two glass envelopes was also very striking. The glass tube containing the bright wire was not even unpleasantly warm; while in the case of the other it was so hot as to blister the skin of the hand; and in this connection it is to be remembered that the vacuum in the two tubes was the same.

I propose as soon as possible to continue this investigation and render it more complete.

XXIV. "Note to a Paper on the Blood-vessels of *Mustelus Antarcticus* ('Phil. Trans.,' 1886)." By T. JEFFERY PARKER, B.Sc. Lond., Professor of Biology in the University of Otago. Communicated by Professor M. FOSTER, Sec. R.S. Received May 2, 1887.

My attention has been called by a perusal of Professor Milnes Marshall and Mr. C. H. Hurst's 'Practical Zoology' (London, 1887), to an omission in my description of the venous system. These authors describe and figure, in *Scyllium canicula* (pp. 218 and 224) a transverse anastomosis, the *inter-orbital sinus*, connecting the right and

left orbital sinuses, and running in the floor of the skull immediately caudad of the pituitary fossa.

I find that this anastomotic trunk is present in *Mustelus antarcticus*, in which species, however, it hardly deserves the name of sinus, being only 1 mm. in diameter in a dog-fish 1 metre long. Its median portion is situated, not in the actual cartilage of the skull-floor, but in the thick perichondrium of the pituitary fossa, where it lies immediately dorsad and caudad of the arterial commissures *w* (fig. 6, Plate 35) at their point of crossing. Passing laterad on either side it pierces the cartilage of the cranial floor, and finally enters the orbit by an aperture placed just cephalad of the trigeminal foramen, and about 5 mm. caudad of the carotid foramen.

I doubt whether this can be the anastomotic trunk described by Robin (see p. 712), since it is not situated "derrière les orbites," and can hardly be described as "un sinus plus ou moins vaste."

The vessel in question ought to have been shown in the diagram, fig. B (p. 723) as a narrow trunk connecting the orbital sinuses (*orbit. s.*), and should have been referred to in the general account of venous anastomoses on p. 722.

XXV. "On Rigor Mortis in Fish, and its Relation to Putrefaction." By J. C. EWART, M.D., Regius Professor of Natural History, University of Edinburgh. Communicated by J. BURDON SANDERSON, F.R.S. Received June 6, 1887.

1. *The Nature of Rigor Mortis.*

It has been long recognised that rigor varies extremely not only in the time of its appearance, but also in its intensity. It may be well marked and resemble closely a spasm, or so indistinct that it is better compared to a stiffening than to a contraction of the muscles. So much is this the case that it might be convenient to describe rigor as accompanied with contraction in some cases and with stiffening in others. I have often noticed that when rigor comes on immediately after the loss of muscular irritability, it looks extremely like contraction; but when it is postponed for days, by lowering the temperature or otherwise, it more closely resembles coagulation. I am inclined to believe that whether the rigor resembles a contraction or a mere stiffening depends on the condition of the nervous system. If the coagulation of the myosin takes place at or about the same time as the death of the nerves, the rigor will to a certain extent be physiological, and simulate a contraction in the extension of the fins, the bending of the trunk, &c.; whereas if the coagulation only sets in some hours, or it may be days, after the death of the