XXXVII. *Some Observations relating to the* Lyncurium *of the Ancients*; *by* William Watson, *M. D. F. R. S.*

Read Dec. 20, 1759. TO determine the substance, denominated *Lyncurium* by the ancients, has been the occasion of much controversy among the more modern naturalists; some of whom, as late Dr. *Woodward*, believed it to be a species of the *belemnites*; others, as the late * M. *Geoffroy*, considered it as *amber*. But it is evident from † *Theophrastus*'s description of the *Lyncurium*, which is the most complete that has been handed down to us, that neither the one nor the other of the before-mentioned substances could be what he intended. His words are, Καὶ τὸ λυγκούριον. ϗ γαρ εκ τούτου γλύφεῖαι τα σφραγίδια. ϗ ἔστι στερεόλατη, καθαπερ λίθος. ἕλκει γαρ ὥσπερ τὸ ἤλεκτρον. οἱ δε φάσιν ὐ μόνον κάρφη ϗ ξυλον, αλλα ϗ χαλκὸν ϗ σίδηρον, εαν ἢ λεπτός. ὥσπερ ϗ Διοκλῆς ἔλεγεν. Ἔτι δὲ διαφανή τε σφόδρα ϗ πυρρά. . . . . γίνεται δὲ ϗ καλεργασία τις αὐτῆ πλειων. From hence we learn, that "the *Lyncurium* was a stone "used for engraving seals on: that it was very hard: "that it was endowed with an attracting power like "amber: and that it was said, and by *Diocles* "among the rest, to attract not only straws and "small pieces of wood, but also copper and iron, if "beaten very thin: that it was pellucid, and of a

* Mater. Med. Vol. I. p. 165. de succino.
Idem et Lyncurium quoque dicitur.
† Theophrastus περὶ τῶν λίθων.

"deep-

" deep-red colour; and required no ſmall labour to " poliſh it." The reſt of *Theophraſtus*'s deſcription is taken up with the fabulous account of the generation of this ſtone, " that it is formed by the urine of " the lynx, which the animal, as ſoon as it parts " with it, hides, and ſcrapes the earth together over " it; and that the ſtones vary according to the ſex " and diſpoſition of the animal."

Dioſcorides *, in his hiſtory of the *Lyncurium*, gives us only the fabulous hiſtory of its generation, before mentioned by *Theophraſtus*; and ſubjoins, that it is called by ſome Ἠλεκτρον πτερυγοφόρον; that is, amber, which attracts feathers to it.

Pliny, in his hiſtory †, diſbelieves both the fabulous account of the generation of the *Lyncurium*, as well as its attractive quality, related both by *Diocles* and *Theophraſtus*, and conſiders the whole as a falſity; though he is candid enough to confeſs, that neither himſelf, nor any one elſe in that age, had ſeen a gem of that appellation.

Theophraſtus, though more ancient, is, in moſt particulars, more to be depended upon than either *Dioſcorides* or *Pliny*. He ought to be conſidered much more of an original author, and one who wrote from his own knowlege, than the others, who, valuable as they are, muſt be regarded, in moſt reſpects, as compilers. His account, then, of the appearance and properties of the *Lyncurium* muſt be conſidered, in order to examine, if any ſubſtance, known in our

* Lib. II. cap. c.

† Plin. Hiſt. lib. XXXVII. cap. iii. Ego falſum id totum arbitor, nec viſum in ævo noſtro gemmam ullam eâ appellatione.

time, anſwers his deſcription. But, firſt, it is plain that Dr. *Woodward*'s hypotheſis of the *belemnites* being the Lyncurium, was ill founded; inaſmuch as the belemnites is neither pellucid, nor fit for engraving ſeals upon, on account of the friability of its texture; neither can it, by any management, be made to attract ſtraws, chips of woods, or other light bodies. Nor is *Geoffroy*'s opinion leſs liable to exception; as amber, though it has the attractive power mentioned by Theophraſtus, yet it has by no means the firm texture requiſite to have ſeals engraved upon it; neither is it ſo very hard, as is expreſly ſaid by this author concerning the Lyncurium, as to require great labour in poliſhing it. Add to theſe, that *Theophraſtus* has given a *particular account* of the hiſtory and properties of *amber* * ſeparately, in the before-mentioned work.

If, after what has been ſaid, I may be permitted to give my thoughts concerning the *Lyncurium* of the ancients, I make no ſcruple to think it to be exceedingly probable, that what we now call the *Tourmaline was the Lyncurium* of Theophraſtus, as it agrees with that author's deſcription in all its ſenſible qualities; to wit, that it is a very hard pellucid ſtone, of a deep-red colour; that it is very proper to engrave ſeals upon; that it attracts, like amber, not only ſtraws and light pieces of wood, but filings of iron and braſs, as has been lately evinced by many experiments. And what will give ſome weight to this

* Vide Theophraſt. περὶ τῶν λίθων. νγ.
Καὶ τὸ ἤλεκτρον λίθος. ᾗ γαρ ὀρυκτὸν τὸ περὶ Λιγυστικήν. ᾗ τε ωναν ἢ τε ἕλκειν δύναμις ἀκολουθεῖν.

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opinion is, that this ſtone, though not much attended to by us till very lately, is very common in ſeveral parts of the Eaſt Indies, and more particularly in the iſland of Ceylon, where it is called by the natives *Tournamal.*

The firſt account which we have had, of late years at leaſt, of this extraordinary ſtone, was in the Hiſtory of the Royal Academy of Sciences of Paris, for the year 1717; where we are told, that Mr. *Lemery* exhibited a ſtone, which, he ſaid, was not common, and came from Ceylon. This ſtone attracted and repelled little light bodies, ſuch as aſhes, filings of iron, bits of paper, and ſuch like. The publiſher of that hiſtory then proceeds to give ſome reaſons for theſe phænomena. *Linnæus*, in his preface to the *Flora Zeylanica*, mentions this ſtone under the name of *lapis electricus*; and takes notice of M. Lemery's experiments before-mentioned.

Notwithſtanding this, no further mention was made of this ſtone, and its effects, till very lately. The duke *de Noya*, in his letter to M. de Buffon, which was preſented to the Royal Society a few months ago, informs us, that when at Naples in the year 1743, the late count *Pichetti*, ſecretary to the king, aſſured him, that, during his ſtay at Conſtantinople, he had ſeen a ſmall ſtone, called a tourmaline, which attracted and repelled aſhes. This account the duke *de Noya* had quite forgot; but, being laſt year in Holland, he ſaw and purchaſed two of theſe ſtones, which are there called *aſchentrikker*. The making experiments with theſe called to his remembrance what formerly had been told him by count *Pichetti*. With theſe ſtones he made, in company with Meſ-

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ſieurs *Daubenton* and *Adanſon*, a great number of experiments, of which the duke has favoured the public with a particular account.

In the year 1757, there were two accounts publiſhed upon this ſubject: the one is a memoir of M. Æpinus, read to the Royal Academy at Berlin, intituled, *De quibuſdam experimentis electricis notabilioribus.* The other is a treatiſe in quarto, printed at Roſtock, intituled, *Diſputatio de electricitatibus contrariis. Auctore Joanne Carolo Wilke.* Since which time, Dr. Heberden, who is ever deſirous of extending the bounds of ſcience, having procured ſome of theſe ſtones from Holland, a great number and variety of experiments with them have been made here, particularly by the ingenious Mr. Wilſon; an account of which he has very lately communicated to the Royal Society.

XXXVIII. *An Attempt to account for the regular diurnal Variation of the horizontal magnetic Needle; and alſo for its irregular Variation at the Time of an Aurora Borealis:* By John Canton, *M. A. and F. R. S.*

Read Dec. 13, 1759.

THE late celebrated Mr. George Graham made a great number of obſervations on the diurnal variation of the magnetic needle, in the years 1722 and 1723; but declared himſelf ignorant of the cauſe of that variation, in N° 383 of the Philoſophical Tranſactions, where many of thoſe obſervations are to be found. About