Mr. H. H. Warner, of Rochester, N. Y., offers a prize of $200 in gold for the discovery of any comet during this year. The conditions are that the comet must be unexpected and telescopic, excepting the comet of 1812, and the first discovery must be made in the United States or Canada, and immediate notification telegraphed to Professor Lewis Swift, of Rochester.

THE PHILOSOPHICAL SOCIETY OF WASHINGTON.

At the 191st meeting of the Philosophical Society of Washington, January 8th, the following papers were read: (1). On a Simple Method of deriving some Equations used in the Theory of the Moon and of the Planets, by Mr. W. F. Mc K. Ritter, of the Nautical Almanac office. (2). On the Orbit of Swift's Comet, by Professor Edgar Frisby, U. S. Naval Observatory.

The elements of Swift's Comet were computed by Professor Frisby from three places observed by Professor Eastman with Washington Transit Circle, on the nights of October 25th, November 7th, and November 20th. They werer ecorded in "SCIENCE," January 8, 1881.

From these elements it is readily inferred that it was moving very nearly towards the earth at the time of its discovery (October 10th) by Professor Swift. On November 8th it came very near the earth's orbit, its distance from it being then about 0.069, the mean distance of the earth from the sun. Its perihelion lies a little outside of the earth's orbit, and its aphelion a little outside of Jupiter's orbit. Its perturbations therefore must at some time become immense, but for a long period it will reach its aphelion at times when Jupiter is in a remote part of his orbit. The periodic time from the above elements is about 2178^d, or a little less than six years. Different periodic times have heretofore been deduced for this comet. Some were deduced at 11 years, others at 5½ years, and still others $11 \div 3 = 3\frac{2}{3}$ years. The period of 5½ years is undoubtedly correct, the slight discrepancy being due to insufficient data. At each alternate return to its perihelion it cannot be seen, since the earth is then in the opposite part of its orbit, and the sun is between the earth and the comet. It passed nearest to the earth about the 18th of November.

The logarithms of radii vectores and distances from the earth on the given dates are—

	log. r.	*log. Δ.*
October 25th	0.035328	9.221510
November 7th	0.029018	9.141693
November 20th	0.034557	9.119295

No theory about any periodic time was assumed in these calculations.

THE ROCHESTER MICROSCOPICAL SOCIETY.

At the annual meeting of the Rochester Microscopical Society, held on the 10th instant, the following officers were elected: President, the Rev. Myron Adams; Vice-President, H. F. Atwood; Secretary, H. C. Maine; Treasurer, Dr. C. E. Rider.

This Society now numbers one hundred and nineteen active members, and is stated to be in a flourishing condition. We trust we may occasionally hear from the Society, and that the record presented in our columns may show that a real advance in microscopical studies has been accomplished.

ELECTRIC FISH.*

BY THE MARCHIONESS CLARA LANZA.

The science of electricity and magnetism is clearly acknowledged to be an acquisition belonging to modern times, we might say to the last century. To the ancients this great world of ideas was completely unknown, with the exception of a few individual facts which must have appeared to them in a very puzzling light, as philosophy and physics were in a wholly powerless and perplexed condition.

If we pass over the electric phenomena of our own atmosphere, thunder and lightning, the only facts concerning electricity known to the ancients were the capacity of the magnet to attract iron, the attractive power arising between two pieces of amber when rubbed together, and the peculiar effects exhibited by electric fish.

One of the most numerous and common fish found in the Mediterranean Sea is the torpedo, which is able to eject electric shocks of such force that a man's arm has often been lamed by them. The knowledge of this fact can be traced back to the farthest antiquity. These fish are so often seen on the coasts of Italy and Greece that the effects produced by them must have led to the first experiments, made, in all probability, by fishermen and people directly inhabiting the coasts of these countries; at all events, the knowledge of this fact is much older than that relating to the magnet and amber, which certainly extends to a remote pre-historic period.

The Greek designation of these words, magnet and amber, contains no etymological relations to the qualities peculiar to these bodies, which must have appeared so mysterious to the ancients. The Greek term for magnet, *Heraklea* and *Magnetis*, denotes simply a stone found in the City of Heraklea or Magnesia—while the Greek word for amber, *Electron*, relates merely to the color of the substance. In this way it is evident that both the magnet and amber were long known to the Greeks and named by them before their peculiar physical properties were ascertained.

With the torpedo it is different. The ancient Greeks called it *Marhe*, and the verb derived from this substantive signifies to stun. In the same way the Latin name, *Torpedo*, denotes something which produces numbness and lameness. In the fish markets of Marseilles and Toulon, the torpedo is called *torpille*, and thus the word torpeur, (derived from the Latin *torpor*), is used in French to denote numbness and stupefaction. The Italian fishermen call it *Tremola* on account of the characteristic trembling sensation which its touch produces. In the Arabic *patois* of the Maltese, *Haddaila* is the name applied to an electric fish.[1] Thus we find that everywhere the name of the torpedo is etymologically allied to its electric capacity, which makes it evident that the knowledge of its peculiarities extends to the most distant period in the construction of language.

Perhaps of no more recent date is the practical and most interesting use which the inhabitants of the Mediterranean countries made of the torpedo's electric capacity, thus undoubtedly representing the beginning of electro-therapeutics. As a certain cure for headache one or more living torpedos placed upon the affected part was strongly recommended—just as at the present time a constant galvanic current is used as the most reliable manner of curing the same complaint.

Aside from this, the numerous passages in the Greek and Roman authors which relate to the torpedo and its effects are mostly of a subordinate interest. Their language, like ours, struggles to express that numb and trembling sensation occasioned by the electricity proceeding from the fish, and which we ourselves are unable to describe and simply designate by the name of "electric

* Translated for "SCIENCE" from the German of Prof. Franz Boll.

1 John Davey, *Anatomical and Physiological Researches*. London, 1839. Vol. I.