



Philosophical Magazine Series 1

ISSN: 1941-5796 (Print) 1941-580X (Online) Journal homepage: <http://www.tandfonline.com/loi/tphm12>

XXXVII. Proceedings of Learned Societies

To cite this article: (1805) XXXVII. Proceedings of Learned Societies , Philosophical Magazine Series 1, 23:90, 182-187, DOI: [10.1080/14786440508562508](https://doi.org/10.1080/14786440508562508)

To link to this article: <http://dx.doi.org/10.1080/14786440508562508>



Published online: 18 May 2009.



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nour to lay before the Royal Society, I have, for greater perspicuity, generally concluded with a recapitulation of the contents; but in the present case this appears to be superfluous, as the whole may be concentrated into one simple fact, namely, that a substance very analogous to tannin, which has hitherto been considered as one of the proximate principles of vegetables, may at any time be produced, by exposing carbonaceous substances, whether vegetable, animal, or mineral, to the action of nitric acid.

Since the preceding experiments were made, I have further proved the efficacy of this substance by actual practice, and have converted skin into leather by means of materials which, to professional men, must appear extraordinary, such as deal saw-dust, asphaltum, common turpentine, pit-coal, wax candle, and a piece of the same sort of skin.

Allowing, therefore, that the production of this substance must for the present be principally regarded only as a curious chemical fact not altogether unimportant, yet, as the principle on which it is founded appears to be developed, we may hope that a more oeconomic process will be discovered, so that every tanner may be enabled to prepare his leather even from the refuse of his present materials.

The organized bodies and their products have only of late years much attracted the attention of chemists, many of whom, even at this time, (although the modes of chemical examination have been so much improved) seem disgusted and deterred by the Proteus-like changes which take place whenever these substances are subjected to experiment.

But these variable and endless alterations of their properties seem rather calculated to operate as incitements to investigation; for by the accumulation of facts resulting from the changes produced in these bodies by disuniting and by re-combining their elementary principles, not only will chemistry as a science become further illumined and extended, but it will, as it has hitherto done, render great and essential services to the arts and manufactures.

XXXVII. *Proceedings of Learned Societies.*

ROYAL SOCIETY, LONDON.

THE meetings of this society commenced, after the summer vacation, on Thursday, November 7, the hon. Mr. Greville,

Greville, in the chair. The business of the season opened, as usual, with the Croonian lecture, by Mr. Carlisle, *on the Power and particular Structure of the Muscles of Fishes*. The excellence of Mr. Carlisle's former lecture on muscular motion awakened curiosity; and if in the present he has been less successful, it is perhaps rather owing to the more limited nature of his subject, than to the want of original observations and experiments. After several minute physiological explanations of the nature and peculiar structure of the muscles of fishes, and their invariable insertion in fleshy instead of tendinous matter, the author proceeded to detail his experiments on their power and particular use, in enabling the animal to move with so much rapidity through a fluid so dense as water. He ascertained that the muscles of the sides and tail are solely those by means of which the fish advances; that the pectoral and abdominal fins serve only to raise or lower, and balance it in the water; and that, deprived of these muscles and again put into water, it remained at the bottom without being able to ascend, but with the power of advancing as before. By cutting off the pectoral and abdominal fins of one side, the fish lost the power of balancing itself upright, fell on its side, and advanced slowly. He accounted for what is vulgarly called drowning in fishes, when caught by the angler's hook, from the very great violence with which they at that time strike the water, and consequent prostration of strength in the muscles, that they fall on their side or back, and appear as if drowned. The effect would be the same if the hook was placed in any other part of the body as well as the mouth; exhaustion, and not suffocation being the cause.

On the 14th, the reading of this interesting paper was concluded. The fluids of fishes coagulate at about 160° of Fahrenheit.

On the same evening was read the Bakerian lecture *on the Force of Percussion*, by Dr. Wollaston, secretary of the society. The nature of mathematical discussions renders analysis extremely difficult, although Dr. Wollaston's lecture possesses the rare merit of brevity and perspicuity. The hitherto undefined, and perhaps undefinable force of animal power has long exercised the ingenuity of mathematicians, and Dr. Wollaston has wisely contented himself with following Smeaton on that subject. His illustration of the force of percussion, however, and of accelerated motion, he conceives to be somewhat novel, and to contain

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something overlooked by his predecessors ; it has certainly
much simplicity.

SOCIETY OF ANTIQUARIES.

The meetings of this society took place on the same evening and hour immediately preceding that of the Royal. On the first night was exhibited a bronze bas-relief of a boy riding on a dolphin, with a head somewhat depressed resembling that of a bird. This curious and highly interesting piece of antiquity was found at Colchester ; but the discoverer could give no satisfactory account of its nature or use. He supposed it to have been one of the *Dii Penates* or *Lares*, and that it represented Cupid, the god of love, in one of the various characters in which the ancients adored that powerful deity. Were we permitted an observation different from these learned antiquaries, we would pronounce it not a Cupid but a *Bacchus seated on a dolphin*, the head of which is depressed, indicating the descent of the jolly god *ad inferos*, which, according to the modern system of explaining mythology, was emblematic of the sun's setting apparently in the sea. This figure is supposed to have been adopted by the Greeks from the inhabitants of the north-west, which they called *Skiros*, where their Cimmerian Tartarus was placed. The discovery of this bronze bas-relief will, we hope, lead to more accurate knowledge of the northern mythology.

On the 14th, the several silver coins of Edward III., and two Roman copper coins (one of Claudius) were exhibited. The latter were found in the bed of the Thames, opposite Sion-house, near Kew. Two drawings of paintings, discovered in repairing the walls of St. Stephen's chapel, Westminster, were also displayed. They are about three feet by two, and consist of several persons around a table in one compartment ; in the other, of three female figures with an *aureola* indicative of their saintship. Both the male and female countenances have the air of Normans : perhaps the painter may have been of that country.

On the 21st, this society was occupied with the election of a member of its council.

FRENCH NATIONAL INSTITUTE.

The class of physical and mathematical science proposes for the subject of a prize, which it will adjudge in the public sitting of the first Monday of Messidor, in the year 15, the following question, which it remits to the meeting, *viz.*

To determine by observations and by anatomical and
chemical

chemical experiments, what are the phænomena of the torpor which certain animals, such as marmots and dormice undergo during winter, with respect to the circulation of their blood, their respiration, and their irritability; also to inquire what are the causes of this sleep, and why it is peculiar to those animals.

It is required that a precise detail be given of the ordinary temperature of these animals, of the degree of cold necessary for their torpor, of the natural temperature which they retain during their lethargy, of the time which is necessary for them to resume their natural temperament when they waken; of the quickness of their pulse during the two states; of the quantity of oxygen which they consume in a given time, both in their quick and torpid state; of the profoundness of their torpor, both with respect to their sensibility and to their simple muscular irritability; finally, of the colour and the chemical state of their blood.

The proposers of the prize do not require that the experiments be made on all dormant animals; only that they be made with strictness on the kinds most easy to be procured.

The prize will be a kilogramme of gold (about 3,400 francs). The memorials sent for competition must be remitted to the secretaryship of the Institute before the first Germinal, of the year 15.

Conditions of the Competition.

All persons excepting the members of the Institute are admitted to the competition.

No work that is sent to the competition is to bear the name of the author, but only a sentence or device.

It is allowed, if the writers choose, to attach a separate and sealed note, which shall inclose, besides the motto or device, the name and address of the author. This note is not to be opened unless the piece obtain the prize. The works destined for competition may be sent to the office of the secretary, franking the packet which contains them. The clerk of the secretaryship will give receipts for them. They may also be addressed, carriage paid, to the perpetual secretaries of the physical and mathematical sciences.

The competitors are informed, that the Institute will not return any of the works which shall have been sent to the competition. The authors shall have liberty to take copies of them, if they have occasion. The administrative commission of the Institute will deliver the gold medal to the bearer of the receipt. In case there shall have been no receipt

ceipt taken, the medal will not be sent, but to the author himself, or to the bearer whom he shall employ.

CELTIC ACADEMY, PARIS,

This academy at a late meeting submitted to the test an ingenious contrivance of one of its members, which communicates the faculty of corresponding and conversing with persons of whose language you are entirely ignorant, without any preliminary study, without expense, without embarrassment, or the least mental exertions. It was tried by twenty-five academicians on the European languages, and this trial demonstrated, that by means of this discovery, a person may travel wherever he pleases without an interpreter; that he may ask for every thing he wants, converse on every kind of subject interesting to a traveller, and even express metaphysical ideas. This process is intended to be made public.

LITERARY SOCIETY, MANILLA.

Dr. Anderson, of Madras, has published in the Madras Gazette the following letter, which he had lately received from the Manilla, announcing the formation of a literary society in that city :

“ There is lately instituted here, under the immediate protection of government, a literary society, to which they have done me the honour to appoint me secretary. The intention of this society is to produce a journal every month, treating of the different branches of useful sciences of the Philippine islands, in order to encourage industry. Each will begin with an historical extract of these islands since the commencement of their establishment by the Spaniards, drawn from the most approved authors on this subject, deprived of all superstition in the antient relations. After that they will speak of the three kingdoms, the animal, the vegetable, and the mineral. Agriculture will occupy a great space; and commerce and industry will furnish the journal with something upon navigation. A few sheets will be reserved for the remarkable events of every description which may have occurred, with observations on their different accidents. This is nearly the plan, which you will be able to judge more of by the prospectus, which I shall have the honour of sending to you by the first opportunity; but it is at present in the press, and will not appear before the end of the month. The society, wishing to acquire all the information and light which can tend to render their work more useful, and at the same time enter
into

into a correspondence with the other different societies who are occupied by the same views, have requested me, and in particular the president, don Domingo Goyena, to inform the society at Madras of their intentions by this opportunity, until they can do it more formally by sending the prospectus of their journal. Not knowing any of the other members of this society excepting you, sir, I take the liberty to request you will engage the learned members of your assembly in favour of this infant society—*Friends of Luçon*—and engage them to admit with benevolence the request to enter into correspondence, and make known to this infant in the cradle their lights, their works; and, in fine, to assist it with their succour, that it may one day be enabled to tread in the steps of its masters. I cannot help being extremely flattered, sir, by a commission which brings to my recollection a person of your merit, and which will often give me the opportunity to assure you of the sentiments of respect and high consideration with which

“ I have the honour to be, Sir,

“ Your very humble and very obedient servant,

Manilla,

“ J. M. DAYOT.”

10th Feb. 1804.

SOCIETY AT BOMBAY.

A society has been instituted at Bombay for the purpose of collecting useful knowledge in every branch of science, and of promoting the further investigation of the history, literature, arts and manners of the Asiatic nations. Sir James Mackintosh, who was elected president, delivered a very eloquent discourse on the occasion.

XXXVIII. *Intelligence and Miscellaneous Articles.*

VACCINATION IN INDIA.

To the Editor of the Government Gazette.

SIR,

THE settlements of Columbo, Madras, and Calcutta, having started nearly at the same time in the race of vaccine inoculation similarly equipped, it may be worthy of inquiry, how so great a difference should exist in their progress as appears by public papers; seeing that some time ago, when the vaccine returns at Madras gave 145,000, those at Calcutta were only 11,000; and now, by the Ceylon Government Gazette of the 5th instant, 26,000 persons have been vaccinated there notwithstanding the pressure