



## PREFACE.

**T**HE superiority of the moderns over the ancients consists not so much in the extent of their knowledge (though that also is considerable) as in the degree of its diffusion. Among the Greeks, by far the most civilized and philosophical people which antiquity has to boast of, knowledge was confined to the schools, or scarcely ventured to show herself abroad. A few individuals engrossed all the learning of the age, while the great mass of the people were sunk in the most deplorable ignorance. In modern Europe, on the contrary, science is scattered with a much more liberal hand over the whole population. All the upper and middle ranks enjoy the blessing of a liberal education: and in Britain, and some other countries, these constitute a considerable proportion of the people. Improvements in any art, or science, are no sooner made in any country than they are sought for with avidity in every other, and soon make their way over the whole civilized world.

This rapid diffusion of knowledge is no doubt owing to the art of printing, which enables us to multiply copies of books with so much ease: an art to which modern Europe is more indebted for her superiority to former ages than any other. But the immediate instruments employed for the diffusion of scientific and useful knowledge are the periodical publications which exist in such numbers in Britain, France, and Germany, and which make it their professed object to scatter every discovery over the whole extent of their circulation. During the 15th and 16th centuries, when periodical journals did not exist, literary men had no better means of conveying information to one another than epistolary correspondence. And if we look into the voluminous epistles of Erasmus, and of his contemporaries, we may form some idea of the great portion of time which was taken up in this irksome and unprofitable employment; which, after all, could answer the intended purpose but imperfectly, and convey the requisite information to a single individual only, and to the small circle of his friends. An author could only appear before the public, when

he had a complete theory to communicate. No single discovery was of sufficient importance to occupy a whole volume. Hence the frequency of two or more individuals being occupied with the same pursuits, publishing on the same subject, and making the same discoveries without any knowledge of what was done by each other. The labours of science were not sufficiently subdivided, and labourer after labourer was apt to move on in the same beaten and unprofitable track. Periodical works save the irksome task of multifarious epistolary correspondence. Every discovery is published as soon as made, fruitless labour is spared, and emulation is kept up and increased by the mutual discoveries of different individuals, by the jarring of opinions, and the clashing of different interests.

The first periodical work of science which made its appearance in Britain was the *Philosophical Transactions*, begun in 1665, and continued for many years, in numbers, published monthly, quarterly, or annually, as materials were more or less copiously supplied. The *Journal des Sçavans* in Paris, and the *Leipsic Acts* in Germany, were somewhat similar in their plan. About the middle of the 18th century the *Philosophical Transactions* altered their form, and came to be published only in volumes. From that period they have consisted entirely of original papers, and have taken no notice of the discoveries made by foreigners, nor of the scientific books which have made their appearance in different countries. Thus Britain no longer possessed a periodical philosophical journal. The *Monthly and Critical Reviews* indeed had commenced, and were conducted with considerable spirit; but being entirely confined to criticisms on books, they could scarcely be considered as registers of the discoveries in science. Perhaps the *Gentleman's Magazine*, which was conducted for many years with much ability, and which contained a great deal of philosophical as well as miscellaneous information, would have been entitled to rank as a philosophical journal, had not the greater number of its columns been filled with articles of belles lettres and antiquarian research.

The first philosophical journal, exactly similar to several which had already existed for some time on the continent, was begun by Mr. William Nicholson in 1797, under the title of *A Journal of Natural Philosophy, Chemistry, and the Arts*. The editor of this journal was well qualified for the office which he undertook. The journal for several years was excellent, and fully entitled to stand a comparison with any periodical work of the kind which had ever appeared. But, owing probably to the quarto form in which it was for some time published, it never acquired so extensive a circulation as might have been expected from its value.

For some years past, if report says true, it has not been the property of the original editor, but of a bookseller; and in reality edited not by Mr. Nicholson, but by some unknown person employed by the bookseller.

Soon after the commencement of Nicholson's Journal, a rival publication appeared under the name of the *Philosophical Magazine*, edited by Mr. Tulloch, a printer from Glasgow, and publisher of the evening newspaper called the *Star*. It was of a more miscellaneous nature than Nicholson's Journal, and perhaps never contained so much original matter; but its circulation was from the commencement more extensive than that of Nicholson's Journal; and this, unless I am misinformed by the London booksellers, continues at present to be the case.

Besides these two philosophical journals, which perhaps have the most extensive circulation, there are two others of a similar kind published in London; one monthly, the other quarterly; but neither of them, as far as I have observed, contains original papers. The first is the *Repertory of Arts, Manufactures, and Agriculture*. It consists chiefly of the specifications of patents granted for new inventions published without variation from the Patent Office, and contains besides a few additional papers in each number copied from the *Philosophical Transactions*, or from some other of the British or French scientific journals. The quarterly journal is entitled, *Retrospect of Philosophical, Mechanical, Chemical, and Agricultural Discoveries; being an Abridgement of the Periodical and other Publications, English and Foreign, relative to Arts, Chemistry, Manufactures, Agriculture, and Natural Philosophy*. This, as the title implies, is merely an abridgement of the other three English philosophical journals, of the *Transactions* published by the different British Societies, and of one or two French periodical works.

Such being the state of the English philosophical journals, our readers will not be surprized that we venture to offer our claims to the attention of the public. We consider the multiplicity of such journals as favourable to the advancement of science in many points of view. It facilitates the publication of useful discoveries, and probably occasions many valuable papers to make their appearance, which in other circumstances would never have been written. It secures the exertions of the respective editors by the powerful feeling of rival interest; and it circulates the valuable dissertations of foreigners through Britain, which might otherwise remain in a great measure unknown to us.

In the present case the editor might easily descant upon the defects of other philosophical journals, he might give a detail of

the qualifications necessary for editing such a work with success, he might make a parade of his own attainments, and describe the pains he has taken to secure the occasional contributions of a very wide circle of scientific friends, and to procure the most valuable continental journals with as much rapidity as is consistent with the present limited and decreased state of intercourse with other countries. But many circumstances prevent him from attempting any such enumeration. Whatever pains the editor of a periodical work may take to display his qualifications, and whatever magnificent promises he may make, the public never fail to suspend their judgment, and to decide upon the work by its intrinsic merit. A few Numbers of the **ANNALS OF MECHANICAL PHILOSOPHY, CHEMISTRY, AGRICULTURE, AND THE ARTS**, will put it in the power of the public to estimate its value, and how far it is likely to contribute to the progress of useful knowledge. It is not necessary to develop the plan which the editor means to follow, any farther than it is developed by the title, and by the number now offered to the attention of the public. It may be necessary, however, to mention, that with regard to plates he does not intend to follow the same regularity as the philosophical journals at present published in London. Should it be necessary on any occasion he will not hesitate to give three or four plates in a single number, and when no plates are wanted in any particular number, he will not scruple to omit them. For he does not consider it as a practice which ought to be followed to introduce papers of trifling value, merely because they require to be illustrated by a plate.

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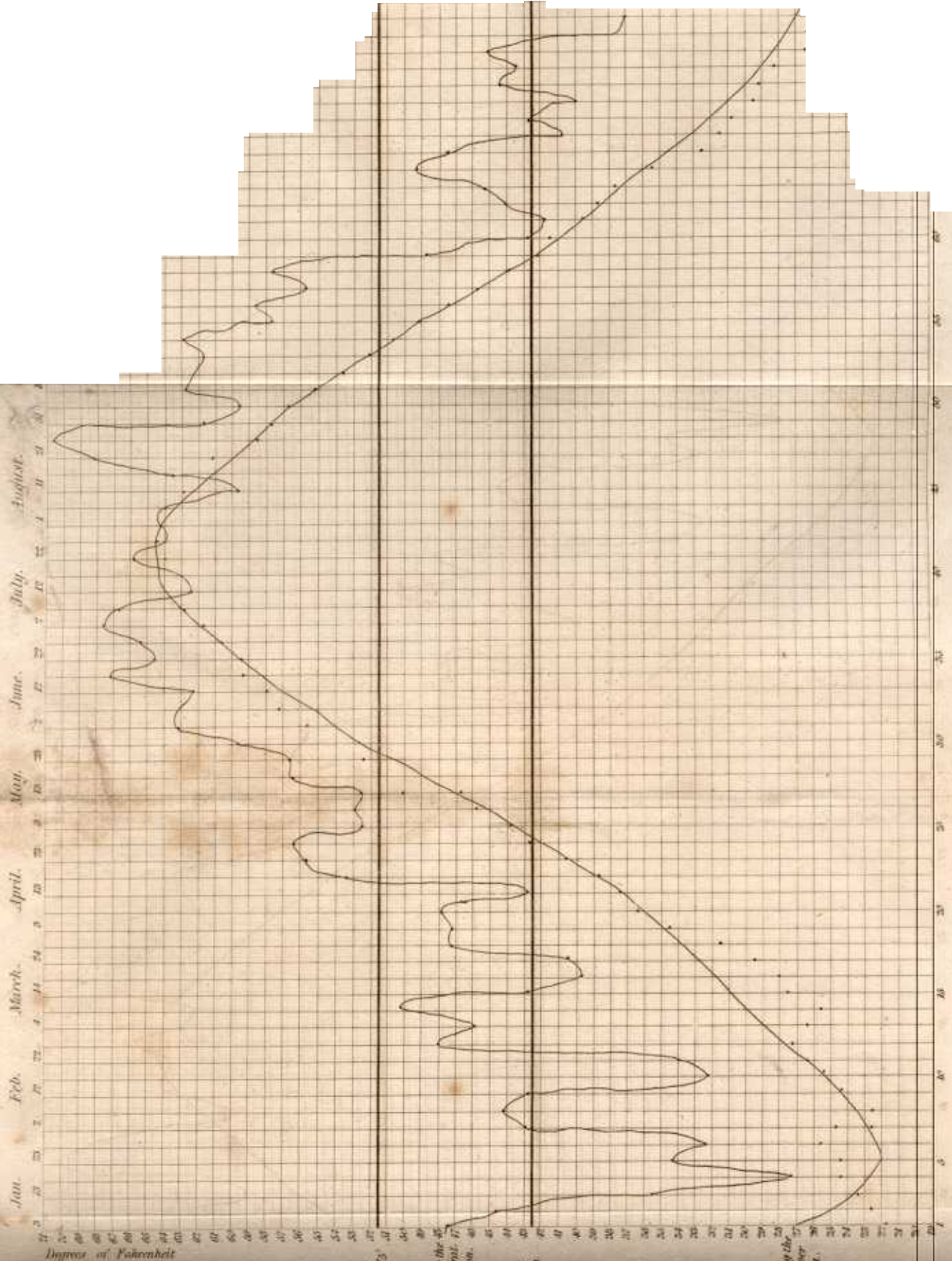
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Degree of Fahrenheit

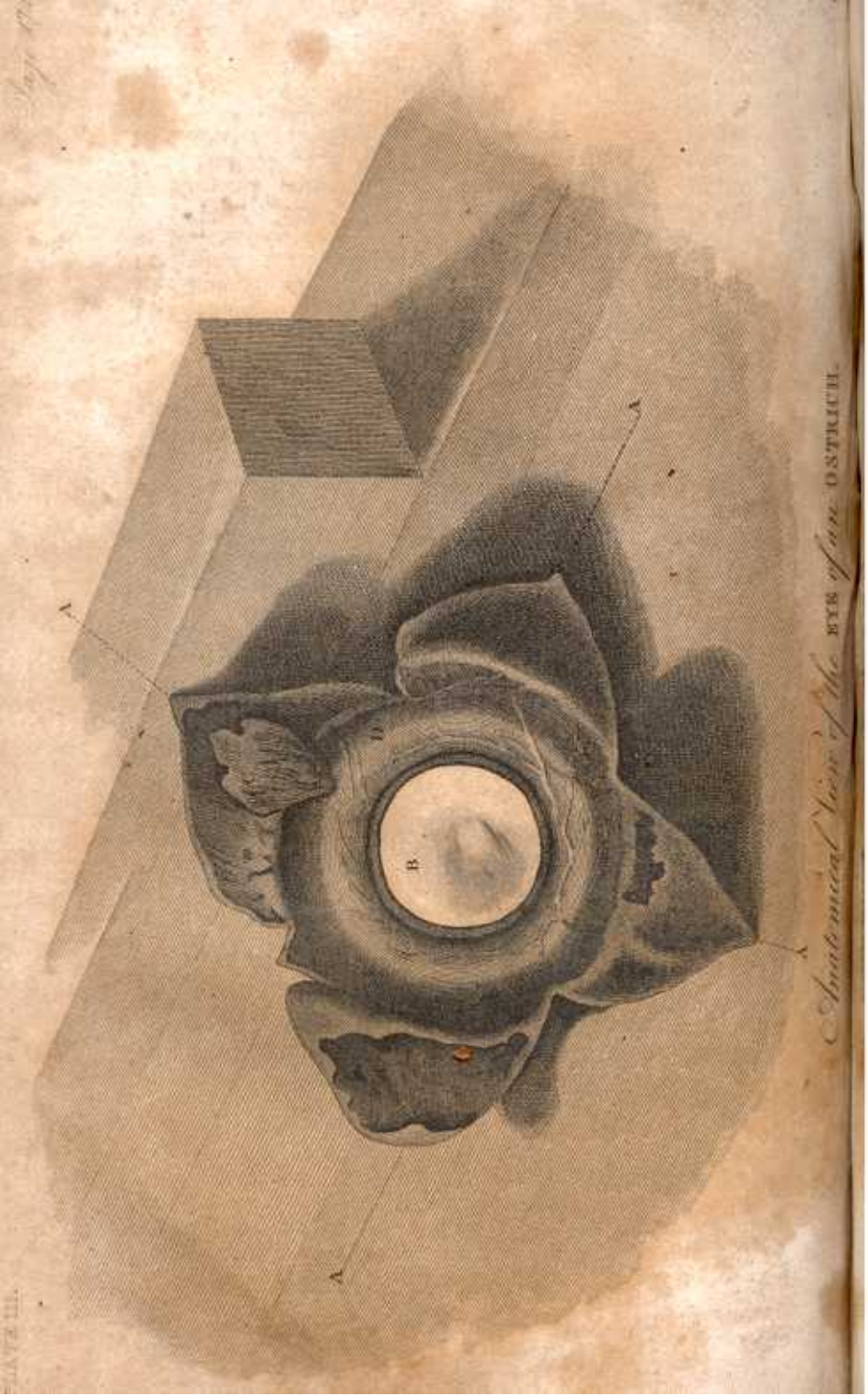
Max for London 1877

In exhibiting the annual temperature of London.

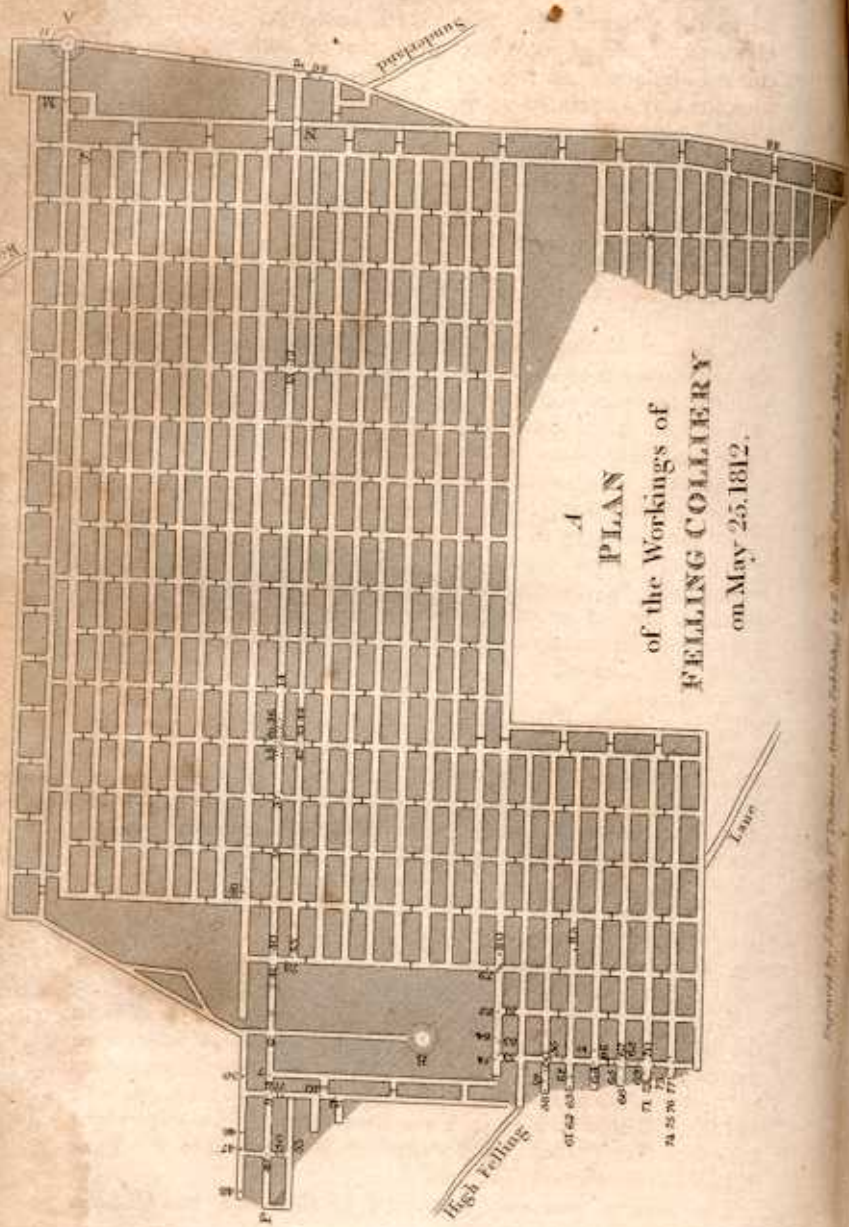
Max for Stockholm 1877

In exhibiting the annual temperature of Stockholm.

Comparative Temperature at LONDON and STOCKHOLM for a Year



*Anatomical View of the Eye of an OSTRICH.*



A  
**PLAN**  
 of the Workings of  
**FELLING COLLIERY**  
 on May 25, 1812.

High Felling

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Approved by a Party of the Felling Colliery, as shown, published by J. Walker, Newcastle, 1812.

