

**THE TRANSACTIONS OF
THE INSTITUTION
OF CIVIL ENGINEERS
OF IRELAND. VOL. I**

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The Editor of the Transactions is directed to state, that the authors alone are responsible for the facts or opinions expressed in their several communications.

TRANSACTIONS
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[November 12, 1844]

*On the ARTIFICIAL PREPARATION OF TURF, independently of
Season or Weather, by R. MALLET, ESQ. C. E. MEM. INS. C. E.
M. R. I. A., &c. &c.*

OF the three principal sorts of fuel provided by the Creator for our use—timber, turf, and coal,—mankind have availed themselves in the course of time, and progress of civilization, in the inverse order of the respective ages or antiquity of these products themselves. Thus, timber has fed the earliest fires probably ever kindled by man; ready to his hand, and always growing for his use, its application to fuel has in every state long survived the dawn of civilization, until at length, the waste of forests, and their subjugation by advancing agriculture, together with the adaptation of timber to naval and civil architecture, and a multitude of other arts, has made it too valuable to be longer burnt.

Peat, wherever it abounds, has formed the fuel of the middle age of man, in arts and social progress. Thus, an ancient author, speaking of the Batavi as reduced to drink beer, and burn turf, says: "O miseram gentem quæ cibum suum bibit, et terram suam urit;" and later, Cardinal Piccolomini, afterwards Pope Pius II. writing in

1458, of Frisia or Friesland, says, "ligno caret bituminoso cespite ignes fovent."

Coal, like the wondrous powers which its extended use has enabled the genius of man to develop, is comparatively a thing of yesterday—the commencement of its general use for fuel, scarce reaches back to the wars of the Rival Roses. Its domestic use was discouraged in the reign of Elizabeth; and the dawn of the last century only witnessed the first great application to arts and manufactures of the fossil fuel, which the invention of Newcomen's engine, had then enabled to be raised abundantly.

The natural gifts of sovereign goodness, however, are distributed with a discriminative hand, that man, in His image, and in the likeness of His power, may ever exercise the creative energies with which he has been endowed, and that his course may be ever onwards.

And thus it is, that in countries such as Ireland, almost deprived of fossil fuel, improvements in the preparation and use of Peat, which so abounds, should always be an object of solicitude. Accordingly, though little regarded here, and commonly viewed as only worthy the attention of the peasant, whose winter comforts depend so much upon its collection, the best method of preparing, and using Turf, have long formed objects of even national investigation, in continental countries possessing extensive deposits of Peat: and in the languages of Denmark, Holland, Germany, and France, an extensive, though little known, literature of the subject exists. With us attention to the improvement of Peat fuel has been rare and casual, and confined to a few individuals, whose energies have unfortunately taken a wrong direction, so that, in fact, the actual practice of collecting and preparing this, the national fuel of Ireland, has always remained unimproved, and is now in its most primitive condition.

To point out what is the direction and aim with which improvement in the collection and preparation of Peat fuel must be sought, and to describe some methods in successful practice in foreign countries, together with some new apparatus which I have devised for the preparation of Turf, independently of season or weather, form the principal objects of this communication. It will be necessary, preliminarily, to notice briefly other proposals made at various times, for the improvement or use of Peat fuel, and to point out the reasons of their partial or entire failure.

To treat this subject fully, it would be desirable to discuss the geological relations of Peat, and the theories that have from time to time, been formed as to the origin and growth of bogs—as this would, however, exceed the limits of this communication, and the proper objects of this Institution, I will only remark that, the commonly received notion that Bogs have been produced by the gradual drainage and filling up by growth with vegetable matter, of shallow lakes, appears quite inadequate to account for the phenomena observable, in the Peat formation; for as such, namely, as the very latest of formations, must the deposit of flat and mountain bog in all countries be viewed.

To render this account, which has received the sanction of the Irish Bog Commissioners, of Portlock, and others, tenable—some distinct origin must be found for the decay of the primary mass of vegetable matter, up to the peculiar state of Peat, and no further—which origin the received view does not supply. Shallow lakes overgrown with aquatic plants and mosses, are observable daily in course of drainage and filling up, but, no true Peat bog, that I am aware of, can be pointed out in act of forming.