Resolved, That, in the opinion of the Franklin Institute, the time has not yet come, when an enactment by Congress should fix the date for compulsory use of the metric system.

Resolved, That the Secretary be requested to communicate this action of the Franklin Institute to the Boston Society of Civil Engineers.

COMMUNICATION.

To the Editor of the JOURNAL OF THE FRANKLIN INSTITUTE:

I beg leave to offer to the JOURNAL the following abstract of my remarks, in the discussion of the reports of the Committee upon the compulsory use of the Metric System, made at the stated meeting May 17, 1876.

Yours,

JOHN W. NYSTROM.

Upon the subject now under discussion—the acceptance by the Franklin Institute of the majority report which has been made to it—I wish to remark :

The majority report has been printed and circulated in pamphlet form, as if approved by the Institute, and is opposed to recommending the adoption of the metric system in this country ; to which opposition of the committee, I have no objection : but before that report is adopted by the Franklin Institute, it is desirable that it should be based upon tenable ground, and not uttered in that spirit of depreciation of the metric system, and of the French nation, which seems to have inspired the Committee. That nation deserves great consideration for its struggle to introduce a universal system of metrology ; an enterprise which, although universally desired, no other nation has ventured to undertake.

The majority report expatiates upon objections to the introduction of the metric system in this country, which are of mere temporary and insignificant import, very much like the English objections to the introduction of the Arabic figures for the Roman notation some 300 years ago. The English were about 400 years behind the Continental nations in the introduction of our present Arabic digits. The English thought that the introduction of the Arabic figures for the Roman notation, would obliterate all records and reckoning, and they expatiated upon the great difficulty and expense in making the alter-

ation. Now, the majority report on weights and measures to the Institute, is conceived in the same spirit, in regard to the introduction of the metric system. What would our technical books, our arithmetic, reckoning and records be to-day with the Roman notation?

At the April meeting of the Institute, it was remarked that the majority report was *practical*, and the minority report *theoretical*. In England, about 300 years ago, the Roman notation was considered *practical*, and the Arabic notation *theoretical*, and this identical distinction between *practice* and *theory* appears to prevail at the Franklin Institute to-day. The terms *practical* and *theoretical* are promiscuously used at the Institute, as a means of support to sciolism and perversion of the truth.

The difficulties which the French have experienced in establishing and introducing the metric system, are not tenable reasons for rejecting its adoption in this country. The difficulties Fulton had in introducing steam navigation, are to-day no objections to its use. The same can be said about Morse and the telegraph, and many other valuable advances upon which our progress and prosperity depend. The Republic of Switzerland and other nations who from French example have adopted the metric system, did not experience the difficulty with their *reamers* and *mandrils*, as intimated in the "practical" report.

The duty of technical and scientific men should be to consider, investigate and explain impartially, the comparative merit and demerit of the French and of our present system of metrology in all their bearings, and leave it for the law-makers to decide whether or not it would be expedient to introduce, or if necessary to enforce the metric system upon us. The majority of our committee, however, have taken it upon themselves to speak, not only for the Franklin Institute, but as though they represented the entire United States.

We have no substantial reasons for supposing that our law-makers would enforce unjust laws, and the Americans are generally a law-abiding people upon whom various laws are enforced every day. It is not for the Franklin Institute to decide whether or not the introduction of the metric system in this country would be an unjust law. We know from experience, history and tradition, that in all parts of the civilized world, communities do not always comprehend their true interests, and it has therefore been found necessary sometimes, to enforce laws by which to guide them into prosperity, as was the case in

England, with the introduction, adoption and enforcement of the Arabic figures for the Roman notation before mentioned. The enforcement of the Arabic figures in England, was made at the expense of burning the Houses of Parliament.*

In case our law-makers should find it expedient to introduce or enforce the metric system upon us, they will no doubt give at least ten years' notice, in which time the present *reamers* and *mandrils* in a tool shop may be worn out, and if not, they will not be likely to conflict with any clause in the new law.

The "practical" committee says, "the Franklin Institute has never placed itself on record as opposing true progress." This statement conflicts with the tenor of their report, and moreover cannot be sustained in an impartial argument. The same committee is "favorable to the introduction of a perfect system of weights and measures," but they at the same time "hope that no such opportunity may be presented in this country." If this paradoxical language is approved by the Franklin Institute, it may be interpreted and understood that this Society favors progress, but will not give any opportunity for it. I admit that to be true, because I have experienced the fact, but fear that such acknowledgment on the part of the committee would weaken the strength of their report. The same committee refers to an article published in the JOURNAL OF THE FRANKLIN INSTITUTE, headed, "The Metric System in our Workshops," which article contains the same kind of feeble ideas on weights and measures, as those in the "practical" report. The "practical" committee says: "The universe under this (metric) system, might be compared to a great French clock, having the earth for its escape-wheel, whose equatorial motion would be 400 metres per second." They evidently expect that such a "practical" idea is good enough to be approved by the Franklin Institute of the State of Pennsylvania, for the Promotion of the Mechanic Arts. The "practical" report is intrinsically imprudent, and, moreover, is ungrateful to the French Government and people, and if adopted as it now reads, it will stamp a mark of *old-fogyism* upon the Franklin Institute, which can never be wiped out, and under no consideration can that report accomplish the effect intended by its authors.

* It is a curious fact that the burning of St. Stephen's Parliament Houses was occasioned by the bon-fire of "tallies" of the old Exchequer accounts, which was made in a court yard.

I beg to be distinctly understood, that I do not advocate the introduction of the Metric System, nor am I against it or opposed to it; but only desire to see dispassionate justice done to it, and therefore feel it a duty to remonstrate against an unphilosophical and hasty disposition of so grave a subject, by a prejudiced Committee of our Society. The tenor of the "practical" report, moreover, seems to border so closely upon arrogance and partiality, as to be scarcely admissible by any institution of learning. A report of this kind ought to be devoted principally to substantial and essential facts bearing directly upon the expediency or in expediency of introducing the metric system as the only legal standard of weights and measures in this country.

Description of Chambers, Brother, & Co.'s Archimedean Brick Machine, Philadelphia, Pa.*—This machine belongs to the class known as "*tempered-clay machines*," or "clay-tempering, brick-making machines," and was invented by the junior member of the firm, Cyrus Chambers, Jr., who is already well known to the public as a mechanic and inventor.

Chambers, Bro. & Co's Archimedean Brick Machine, Philadelphia, Pa.

The machine is constructed almost wholly of iron, and is made very strong and durable.

It *tempers its own clay with water*, taking the clay as it comes from the bank, without any *previous handling or preparation*, and forms it into bricks, with well-defined corners, and smooth, straight surfaces,

* Paper read before the meeting of the Franklin Institute, April 19, 1876.