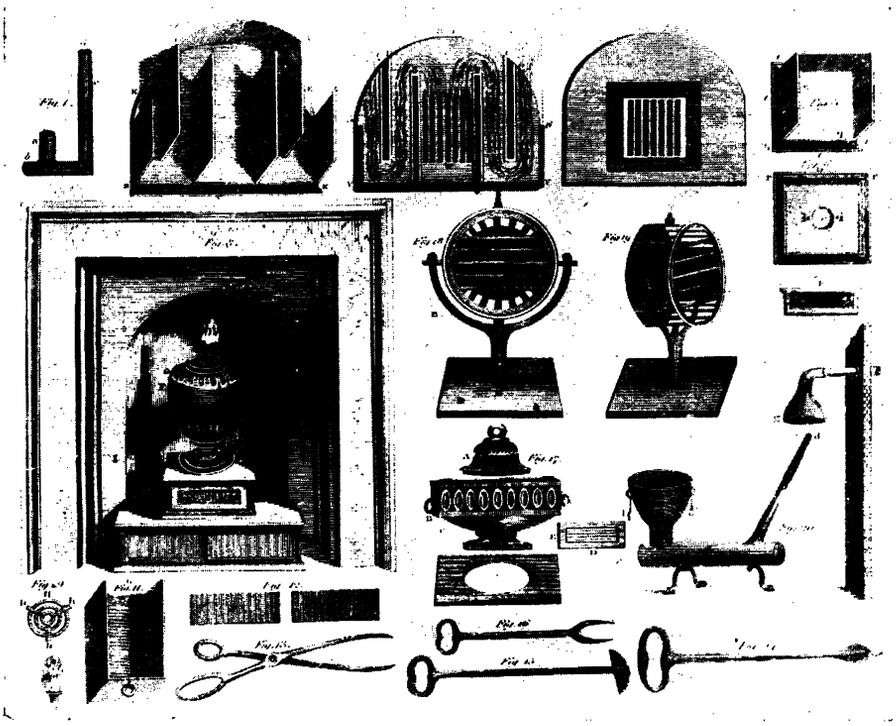

THE FRANKLIN STOVE

And its several parts, with the implements necessary for its use. From Franklin's original account of his invention.

which has a corresponding hole two inches diameter through its bottom.

The top of the vase opens at O, O, O, figure 8, and turns back upon a hinge behind when coals are to be put in; the vase has a grate within at N N of cast iron H, figure 9, and a hole in the top one inch and a half diameter to admit air, and to receive the ornamental brass gilt flame M, figure 10, which stands in that hole, and, being itself hollow and open, suffers air to pass through it to the fire.

G, figure 11, is a drawer of plate iron, that slips in between in the partitions 2 and 3, figure 2, to receive the falling ashes. It is concealed when the small sliding plates Y Y, figure 12, are shut together.

I, I, I, I, figure 8, is a niche built of brick in the chimney and plastered. It closes the chimney over the vase, but leaves two funnels, one in each corner, communicating with the bottom box K K, figure 2. . . .

Let the first fire be made after eight in the evening, or before eight in the morning, for at those times and between those hours all night, there is usually a draft up a chimney, though it has long been without fire; but between those hours in the day there is often in a cold chimney a draft downwards, when, if you attempt to kindle a fire, the smoke will come into the room.

But to be certain of your proper time, hold a flame over the air-hole at the top. If the flame is drawn strongly down for a continuance, without whiffling, you may begin to kindle a fire.

First put in a few charcoals on the grate H.

Lay some small sticks on the charcoals.

Lay some pieces of paper on the sticks.

Kindle the paper with a candle.

Then shut down the top, and the air will pass down through the air-hole: blow the flame of the paper down through the sticks, kindle them, and their flame passing lower, kindles the charcoal.

When the charcoal is well kindled, lay on it the sea-coals, observing not to choak the fire by putting on too much at first.

Flame Descends

The flame descending through the hole in the bottom of the vase, and that in plate D into the box C, passes down farther through the grate W W in plate B 1, then passes horizontally towards the back of the chimney; there dividing, and turning to the right and left, one part of it passes round the far end of the partition 2, then coming forward, it turns round the near end of partition 1, then moving backward, it arrives at the opening into the bottom of one of the upright corner funnels behind the niche, through which it ascends into the chimney, thus heating that half of the box and that side of the niche. The other part of the divided flame passes round the far end of partition 3, round the near end of partition 4, and so into and up the other corner funnel, thus heating the other half of the box, and the other side of the niche. The vase itself, and the box C, will also be very hot, and the air surrounding them being heated, and rising, as it cannot get into the chimney, it spreads in the room; colder air succeeding is warmed in its turn, rises and spreads, till by the continual circulation the whole is warmed.

Science News Letter, October 10, 1931

ENTOMOLOGY-GENETICS

Insect Species Produce Families all of Same Sex

INSECTS that produce families of only one sex, instead of the ordinary half-male, half-female ratio, have been studied by Dr. C. W. Metz at the Johns Hopkins University. They belong to the genus Sciara, which is a tiny insect related to flies and mosquitoes.

In his endeavor to find the reason for this strange state of affairs, Dr. Metz has made microscopic examination of the chromosomes in the germ-cells of his insects. He finds that the male reproductive cells apparently are able to transmit either maleness or femaleness to the offspring. The sex determination, excluding either males or females completely from the progeny of a given mother, must therefore take place in the body of the mother insect. But just what the mechanism of this determination may be, it has not yet been possible to discover. Dr. Metz, who is also associated with the department of genetics of the Carnegie Institution of Washington, will have his results published in the forthcoming issue of *The Quarterly Review of Biology.*

Science News Letter, October 10, 1931