forgotten, and such men as Prof. Cook and others, who have studied our science for over 20 years, fearlessly assert that "no one will say his new book or new hive is copied."

"Nothing more original in the line of a beehive, has appeared since Mr. Langstroth's invention." Yesterday, I received a letter from a very angry bee-keeper, and one whose ignorance regarding inventions and patents is truly astonishing and in which occurred the following sentence, or words to that effect —"If you want to prosecute come on. I am going to use what you claim as your invention. The same thing has been in use here for years, and I transferred a colony out of just such a hive."

This is a fair illustration of the facts in the case. This bee-keeper is mistaken about the old hive being like mine, and he is in no way liable to prosecution, for making that old hive just as it was before. You see, he has been transferring out of a hive just like mine," and now since my book has been issued, he is going to defiantly transfer back into this hive, or one "just like mine."

Do bee-keepers desire to reap the results of my labor, whether as an inventor, promulgator or advertiser? Haven't I as much right to the the results of my labor in the one case as in the other ?

## Dowagiac, Mich.

JAMES HEDDON.

We think your explanation is quite clear and satisfactory. There is no doubt that many have thought they had something very nearly like the new hive, in fact, we have been working on many inventions and have used things that we might claim were similar but if we undertook to make a perfect hive to work on the same principle as yours they would lack many important features. We agree with you regarding Mr. Shuck's invention-that we believe his patent is valid and his hive original and differs in many respects from anything that we have ever seen or heard tell of. There are many good points in connection with his hive. His feeders are too well known and too much appreciated to require any comment.

FOR THE CANADIAN BEE JOURNAL. SCIENCE AND APICULTURE.

WAS much surprised at many of the statements in Friend Pringle's article in last C. B. J. Our friend is usually so accurate, but in this article he makes many statements, that I supposed were without any foundation.

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I will also add that I teach Physiology and Anatomy, and  $\vec{I}$  intend at least to keep abreast the progress of the science. I did not intend to speak again, and will be very brief.

1st. It was Lavoisier and not Liebig who said that animal heat was caused by combustion in the lungs. As the blood in the left ventricle just from the lungs is 1° colder than that on the other side, it is evident that the lungs are a refrigerator and not a furnace. Thus Lavoisier's theory was very short lived. Liebig said it was combustion, but he placed the furnace in the capillaries, and not in the lungs. Yet the experiments I have already given show this to be untenable. Animals that can live some time without oxygen will still give off carbonic acid and even faster than when the condition is normal. This is because the tissues are irritated, from lack of the most necessary food, oxygen, and so wear out faster, and so give off more waste.

The late Dr. Carpenter was a great scientist but his physiology is very old, and is now no authority. Huxley is a great and a recent authority and agrees with the view I have given, exactly as does Foster, Martin, indeed I think all the authorities; nor are they dogmatic, for the experiments I have given demonstrate, that heat comes from the work of the body. We may say, as does Huxley, that it is from the oxidation of the tissues, for this occurs with vital work. To quote Huxley's last ed. Physiology p. 128, Heat is generated wherever tissues are being converted into waste products. This is oxidation, but probably never direct oxidation.

Pyrogallic acid has such an affinity for oxygen that it is used to measure the oxygen of the air. Yet when injected into the blood it passes from the body unoxidized. We may say then tha<sup>t</sup> oxygen is taken to serve as food; is used to build up tissues. When such tissues act, oxidation occurs, and carbon dioxide is eliminated. I am done.

Lansing, Mich., April, 1886.

А. J. Соок.

## FOR THE CANADIAN BEE JOURNAL. "THE POLLEN THEORY."

T would be hard to better the remarks made by Rev. W. F. Clarke (page 645, C. B. J.) in regard to Prof. Cook's essay on the "Pollen Theory," read at the Detroit Convention. They were that "the Pollen Theory had got its quietus from Prof. Cook. He has mentioned that bees cannot breed without taking nitrogenous food. If they take that food it must be digested and the feces excreted. Well, Mr. Barber and Mr. Hall have proved that bees breed