(2) It can be used with low-boiling compounds such as ethyl bromide. (3) Metals in the residue may be very easily determined. (4) The accuracy is greater than in Robertson's method, as shown by a comparison of analyses. (5) The use of oxygen and platinized asbestos is never necessary. (6) There is no danger of the reaction becoming too violent or of the projection of particles onto the walls of the flask. (7) The time required is less, particularly because it has been found since publication of the last paper by Willard and Thompson,[3] that the apparatus described by them for the micro determination of halogens can also be used for samples as large as 0.1–0.2 g. This results in a saving of time as well as of space required for the apparatus. For samples of 0.01–0.02 g. an apparatus about half the size of this, or only 28 cm. high, works perfectly.

CONTRIBUTION FROM THE
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RECEIVED JULY 17, 1930
PUBLISHED AUGUST 5, 1930

COMMUNICATIONS TO THE EDITOR

THE HEAT OF FORMATION OF MOLECULAR OXYGEN

Sir:

In a recent communication Copeland[1] has reported a value for the heat of formation of molecular oxygen of 165,000 cal. We have been engaged in a similar determination by an experimental method which differs only in minor details from the method used by Copeland. The results of our first determinations were in substantial agreement with those reported by Copeland, the average of a number of runs being about 160,000 cal. When we checked the method for possible errors we discovered that we were getting spurious heat effects in the calorimeter. When we took precautions to eliminate these heat effects we obtained as the average of a number of fairly consistent runs 131,000 cal. We do not find any evidence that metastable atoms reach the calorimeter.

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[3] Willard and Thompson, THIS JOURNAL, **52**, 1893 (1930).

[1] Copeland, *ibid.*, **52**, 2581 (1930).