Nottingham Section.

UNIVERSITY COLLEGE, NOTTINGHAM.

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<i>H. Forth.</i>	<i>Sir John Turney.</i>
<i>E. Francis.</i>	<i>J. T. Wood.</i>
<i>S. J. Pentecost.</i>	

Treasurer: J. M. C. Paton.

Hon. Local Secretary:

R. L. Whiteley, University College, Nottingham.

The names in italics are those of members of Committee who retire at the end of the current Session.

The following have been elected to fill the vacancies, and will take office in July next:—*Vice-Chairman: F. Clowes. Committee: F. J. R. Carulla, F. D. Mordle, and G. J. Ward.*

SESSION 1892.

1892:—

May —.—Mr. C. Spackman. "Notes on the Manufacture of Portland Cement from Lime Mud after Treatment by the Chance Sulphur Recovery Process."

Meeting held Thursday, February 10th, 1892.

MR. L. ARCHBUTT IN THE CHAIR.

ON AN IMPROVED FORM OF PIPECLAY TRIANGLE.

BY J. B. COLEMAN, A.R.C.S.C., F.I.C.

In the various supports used for holding crucibles and like vessels during heating, the following disadvantages are present:—

1. Platinum triangles on heating to a high temperature expand and soften, inducing "sagging." If platinum vessels are heated, partial fusion between the wire and vessel may occur. The expense also is considerable, and effectually precludes its use by all but advanced students.

2. The ordinary pipeclay triangle prevents contact of the flame, except at the three angles, particularly if the vessel to be heated is small, such as crucibles, &c.

3. Triangles made entirely of porcelain and fireclay are fragile and expensive.

The modification in the improved form of triangle shown in Fig. 1 consists simply in making a flange in the middle

Fig. 1.

portion of each of the three pieces of pipeclay forming the triangle. In this way contact takes place in three points

only; and thus leaves ample space for the flame to play upon the surface exposed. The result is that thorough contact between the flame and the vessel to be heated is secured. The effect of this improvement is to lessen the time of heating, and also to increase the temperature attainable from a given flame.

The following experiments show the advantages of the triangles. The flame used in these experiments was that from a Bunsen burner, the gas supply of which was regulated by means of a Stott's governor.

1. A platinum crucible was used and 10 cc. of water were gently heated to boiling, first in the improved and then on the ordinary form of triangle; the time required was carefully noted. Results:—

	Temp. of water, 11° 3' C.	Temp. of air (constant), 13° C.	
			Seconds.
Improved triangle.	Time required for 10 cc. of water...	45	
Ordinary "	" " " " "	60	
Difference in favour of improved triangle			15

2. (a.) A platinum dish was employed, 50 cc. of water were heated to boiling on both forms of triangle, and the time required noted. Results:—

		Seconds.
Improved triangle with 100 cc. water		65
Ordinary " " " " "		85
Difference in favour of improved triangle		20

(b.) Into a porcelain dish 2½ in. diameter, 103 grms. of an alloy of lead and tin were introduced. The dish was heated until the alloy was thoroughly melted and the time required noted:—

	Min.	Secs.
With improved triangle	2	20
" ordinary "	2	50
Difference in favour of improved triangle		30

Hence the gain in time was from 20 to 25 per cent.

3. In flat-bottomed vessels the results were not so good, but were slightly in favour of the improved form of triangle.

4. Experiments were also made in burning off organic matter. In some cases the time occupied was less than half that required when the ordinary form of triangle was employed.

To sum up, the triangle is cheap since it can be made in long lengths and cut up into suitable portions by means of a file, which are then threaded and bound together by iron wire in the ordinary way. It is strong, since the flange is made at the weakest point, that is, at the middle. It is economical, since a higher temperature and more rapid heating is obtained from a given flame.

In the experiments recorded above, ordinary pipeclay was used. The mould was made of hard wood, a smooth iron wire being used for the core. After the clay was moulded into shape the wire was withdrawn, and the clay dried in the steam oven, and finally heated for several hours in a muffle furnace and allowed to cool slowly. For use on a large scale polished steel moulds will be found suitable so as to admit of a greater length of pipeclay being made at once, which may after annealing be cut up into the required lengths.

DISCUSSION.

The CHAIRMAN exhibited a welded platinum triangle which he had used for many years. He found it an advantage to be able to alter the shape of the triangle to suit different sized crucibles. There was always a slight adhesion between the triangle and the crucible at a red heat, but even after heating in the blowpipe flame no transference of metal took place. It was, however, advisable to allow the triangle and crucible to cool down below redness before separating them; a slight touch was then sufficient. Mr. Coleman's triangle was a great improvement on the ordinary clay triangle.