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THE PROPORTION OF OXYGEN PRESENT IN LINSEED-OIL, BOTH BEFORE AND AFTER OXIDATION.

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(*Read at the Meeting, June 1, 1898.*)

THE elementary composition of raw linseed-oil is stated by W. T. Brannt ("Animal and Vegetable Fats and Oils," p. 273) to be as follows :

	C.	H.	O.
Cold-drawn	78·11	10·96	10·93
Hot-pressed	75·27	10·88	13·85

In Allen's "Commercial Organic Analysis," vol. ii., p. 118, I find the following figures for linseed and poppy oils respectively, the results of the linseed-oil being those of three observers :

Observer.	Kind of Oil.	C.	H.	O.
Sacc	Linseed	78·11	10·98	10·93
König	"	77·40	11·10	11·50
Clöez	"	77·57	11·33	11·10
"	Poppy	77·50	11·40	11·10

After eighteen months' exposure the two last samples gave :

Clöez	Linseed	72·27	10·57	24·16
"	Poppy	71·38	10·64	25·08

These figures indicate comparatively little difference between linseed and poppy oils, either in the raw state or after "drying."

About a year ago I was engaged upon a research, in the course of which it was necessary to submit to ultimate analysis several samples of linseed-oil, some raw and others after boiling and oxidizing in various ways. The results are given in the table below :

	Raw.		Boiled.	Solid.							
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	
C. ...	75·03	75·40	74·66	74·32	69·74	69·52	64·74	65·40	68·64	64·38	
H. ...	10·78	10·64	10·38	10·04	9·57	9·49	9·01	9·00	9·24	9·01	
O. ...	14·19	13·96	14·96	15·64	20·69	20·99	26·25	25·60	22·12	26·61	

The figures in the first two columns were obtained from raw linseed-oil, those in the third from moderately stout boiled oil. All the other figures refer to samples of solid oil, such as is used in the manufacture of linoleum. Sample 4 was made by one method, 5 by another, samples 6 to 9 by a third process, and 10 by a fourth.

As will be observed, sample 4 contains very much less oxygen than any of the other samples of solid oil. It is interesting to notice that the samples marked respectively 8 and 10 gave fairly similar results, although the oils were made by entirely distinct methods.