Pennsylvania oil	0.721
Oklahoma oil	.734
California oil	.742
Mexican oil	.759

These figures, in connection with the specific gravity value for the mixed aromatic hydrocarbons, were used in calculating the percentage formation of low-boiling aromatic hydrocarbons. For example, a California oil (Kern River crude) that was cracked at a temperature of 600° C. and at a pressure of 12 atmospheres gave a percentage recovery of 52.5 per cent. On distillation, 22.5 per cent boiled below 150° C., the specific gravity of the cut being 0.842. The last figure represented a mixture containing 75 per cent of the aromatic hydrocarbons. The total low-boiling aromatic hydrocarbons formed, on the basis of the original oil, were therefore 75 per cent times 22.5 per cent times 52.5 per cent, or 8.3 per cent.

LOW-BOILING AROMATIC HYDROCARBONS FORMED IN EXPERIMENTS.

The values obtained by means of the calculations appear in Table 27 following. Here again an excellent agreement among the determinations for the various original oils is to be noted, demonstrating that the conditions of treatment are of more importance than basic physical and chemical differences.

TABLE 27.—*Results of cracking oils under varying conditions of temperature and pressure, showing percentages of low-boiling aromatic hydrocarbons (combined benzene, toluene, and xylene) formed, calculated on basis of original oil.*[a]

Furnace conditions.		Percentage of low-boiling aromatics formed from original oil from—				
Temperature.	Pressure.	Pennsylvania.	Oklahoma.	California.	Mexico.	Average.
° C.	*Atmospheres.*					
850	1	2.4	.....	.....	.....	2.4
850	(b)	.....	4.1	4.4	.....	4.3
800	(b)	.....	4.6	7.1	.....	5.9
750	12	5.6	7.7	8.0	.....	7.1
750	6	6.8	5.9	7.9	.....	6.9
750	1	5.1	4.7	5.0	.....	4.9
750	(b)	4.1	4.2	2.2	2.9	3.4
650	(b)	.....	1.4	.....	.....	1.4
600	24	12.4	11.2	9.7	.....	11.1
600	18	13.4	14.0	12.3	.....	13.1
600	12	13.4	6.9	8.8	4.1	8.3
600	6	7.1	9.8	12.2	.....	9.7
600	1	7.3	5.8	5.1	4.3	5.6
600	(b)	1.0	1.1	3.0	0.4	1.4
550	24	.....	4.7	7.7	.....	6.2
550	18	.....	7.3	.....	.....	7.3
500	24	7.0	2.1	4.2	.....	4.4
500	18	5.6	.....	.....	.....	5.6
500	12	5.6	1.8	3.7	0.9	3.0
500	6	2.6	.....	5.4	.....	4.0
500	1	1.8	0.6	1.2	1.1	1.2
500	(b)	0.7	.....	.....	.....	0.7
450	18	.....	3.3	.....	.....	3.3
450	12	2.9	1.3	1.1	.....	1.8
400	10	.....	.....	.....	0.2	0.2

[a] Results for higher pressures are low, owing to oil being consumed in building up pressure.
[b] Vacuum.