the workers had smoked tobacco before the test. The carbon monoxide exposure is therefore slight. Moreover, in patients suffering from acute gas poisonings (described below) one did not find pathological values of COHb.

Hydrogen cyanide and carbon disulfide occur in too small concentrations to cause poisonings, and the same is true for the mercaptans, the latter, by the way, being relatively innocuous ethyl and methyl mercaptans.

The content of sulfur dioxide varies considerably within the plant, and this gas does not occur in the distillation gases, as will appear from table 1. Air analyses proved that only at one place did the concentration exceed the tolerance limit for persons not accustomed to sulfur dioxide. It can therefore be excluded as an etiological factor, at least for serious poisonings.

After condensation only those hydrocarbons remain which are still in gas form at the condensation temperature, i. e., hydrocarbons with less than five carbon

TABLE 1.—*The Composition of the Gases Mentioned in Chart 1 (A-H) in Percentage*

Gas	A	B	C	D	E	F	G	H
H_2S	16	28	14	25	20	0.5	0	0.5
CO_2	10	8	12	5	10	4	0	4.5
CO	1	1	1	0.5	1	1	0	1
O_2	0.5	0.2	0.5	0.1	0.5	0.4	0	0.5
N_2	35	12	25	2	25	29	0	33
H_2	16	18	28	20	20	25	0	27
CH_4	..	..	..	..	..	21	0	24
C_2H_4	..	..	..	..	..	1	0	1
C_2H_6	..	..	..	..	..	8	0	8.5
C_3H_6	21.5	33	20	48	24	1.5	17	0
C_3H_8	..	..	..	..	..	3.5	33	0
C_4H_8	..	..	..	..	..	2	22	0
C_5H_{10}	..	..	..	..	..	2.5	28	0
C_5	..	..	..	..	..	0.5	0	0
HCN	..	About 50 mg./m.³		..	..	0	0	0
CS_2	..	..	About 1 Gm./m.³		..	...	0	0
COS	..	..	About 1 Gm./m.³		..	...	0	0
RSH	..	..	About 5 Gm./m.³		..	...	0	0

atoms. They will form approximately a quarter of the gas piped through the plant and are (*a*) the paraffins methane, ethane, propane and butane and (*b*) the olefins ethylene, propylene and butylene (table 1). The first two (methane, ethane) make up the main part, but they are simple asphyxiates, i. e., physiologically inert gases that act only mechanically by excluding oxygen. Propane and butane have some anesthetic properties, but, according to Henderson and Haggard [2] (1943), there are apparently no ill effects from remaining for several hours in an atmosphere containing these gases in concentrations as high as 3 to 5 per cent, or from repeated exposure. Ethylene, propylene and butylene have anesthetic properties only at high concentrations, 60 per cent or more.

The liquefied gas, named Gasol, contains approximately 17 per cent of propylene, 33 per cent of propane, 22 per cent of butylene and 28 per cent of butane; therefore the toxicity of this gas is exceedingly small, especially as compared with the usual city gas.

2. Henderson, Y., and Haggard, H. W.: Noxious Gases and the Principles of Respiration Influencing Their Action, American Chemical Society Monograph Series, no. 35, New York, Reinhold Publishing Corporation, 1943.