

The gas-escapes on Messrs H. Morrison's and Cameron's properties, east of Carswell's, when visited by the writer, had the characteristic smell of kerosene; but no oil was seen. Several reported occurrences of oil-films—for instance, one north of Akitio, on the inland side of the coastal range—may be considered as more probably due to iron-oxide or to oily material formed by the decay of surface vegetation than to petroleum. Reported oil-films in a small creek east of Mr. Morrison's gas-spring could not be seen by the writer, owing to the flooded state of the stream.

At Mr. Maunsell's house, near Tenui, it is said that, after a flood caused not long ago by the damming and subsequent breaking-away of a neighbouring small stream, a smell of petroleum was perceived for weeks.

Gas.—A number of gas-springs are found in the eastern Wairarapa district. One of the best-known of these is on the property of Mr. H. Morrison, between Carswell's and Blairlogie. The spring itself is on the east side of Kerosene Ridge, at a barometric height of 910 ft. above sea-level. In fine weather the gas is reported to burn steadily with a flame from 6 in. to 15 in. high. At the time of the writer's visit during heavy rain gas was bubbling vigorously through the water in a small hole about 6 in. in diameter, whilst over an area of several square yards there were numerous small escapes of gas. The main gas-escape ignited readily, and burnt with a bluish-yellow flame. The water in the hole tasted very perceptibly of kerosene.

A second gas-spring occurs about a mile and a half to the northward, on Mr. Cameron's land, and about a quarter of a mile south of the Whakataki Road. Here, over an area of two or three yards, the writer noted gas-springs escaping in numerous small jets. Some of these when lighted burnt continuously with a pale bluish flame. The discoverer, Mr. J. Cameron, who had guided the writer to the spot, said that when first found the gas was escaping from a single vent, and burnt with a flame of some size.

Near Ica, in Boundary Creek, a small eastern tributary of the Whareama River, Park describes a small escape of carburetted hydrogen. According to information supplied to the writer by Mr. Campbell, manager of Mrs. J. C. Andrew's property, what is probably the same occurrence does not afford on trial with a match any inflammable gas at the present time.

It is stated by Park that he was informed that during the formation of the road from Aohanga Landing to the homestead the grey shaly clays (mudstones) of the cuttings were found to give off a large amount of gas. This possibly was derived from the glauconitic sandstone already described as containing petroleum.

In the neighbourhood of Aohanga and northward, in the Akitio district, are a number of inflammable-gas springs not visited by the writer. Those of which the writer has reliable information are as follows:—

- (1.) At Spring Hill, about a mile north-west of Mr. Hume's Aohanga homestead, are two gas-springs within half a mile of each other.
- (2.) At Glencoe Gorge, about six miles up the Aohanga River, there is a large gas-spring on Mr. Humphries's land. The rocks here are solid well-bedded sandstones, and a small anticline is said to be visible.
- (3.) On Messrs. Toxward and Gray's property, some miles up the Akitio River and on the south side, are several fairly strong gas-escapes within a quarter of a mile of one another. The following analysis (No. 1) shows the composition of the gas from one of the springs. With it are given for comparison analyses of gases from No. 2 and No. 3 bores of the Taranaki Petroleum Company (Nos. 2 and 3).

					1.	2.	3.
Methane (CH_4)	..	..	..	..	35.3	24.4	22.7
Ethane (C_2H_6)	..	..	..	..	17.6	16.3	25.8
Oxygen	..	..	..	..	12.0	1.3	1.3
Nitrogen	..	..	..	..	35.1	8.8	6.5
Carbon-dioxide (CO_2)	..	..	..	..	Nil.	49.2	43.7
					100	100	100

Clefines (C_nH_{2n}) were not present in any of these samples. With regard to No. 1 (the Akitio gas), which is said to burn with a bright flame, Dr. Maclaurin remarks,—“The illuminating properties of the gas are due to the hydrocarbons (methane and ethane) present. The oxygen and nitrogen may be wholly or partly due to air having found its way into the bladders, rubber being slightly permeable to gases.” The absence of carbon-dioxide from this sample is worthy of note.

- (4.) On Mr. Frank Armstrong's property, at Esdale, on the south side of the Akitio River, eight or nine miles from its mouth, is a gas-spring.
- (5.) Between Akitio and Weber, at Titree Point (north of the Waimata River, and eight or nine miles from Weber), are some fairly vigorous gas-springs. Again, near the Oparae Road, about five miles from Weber, is a strong gas-escape, said to have been discovered only a few months ago. The writer is informed that ever since the discovery the escaping gas has been burning over an area of several square yards, with a flame of at least a few feet high.
- (6.) The mineral springs at Langdale give off bubbles of a slightly inflammable gas which from the smell may be identified as sulphuretted hydrogen (H_2S).

Mineral Springs.—The occurrence of mineral springs in several localities may be mentioned, since these are thought to be indicative of the presence of petroleum. One visited by the writer occurs on Mr. H. Morrison's property, and is on the north side of Middle Division Creek. The