20. *Chemical Composition of the 1951-lavas of Oshima Volcano, Seven Izu Islands, Japan.**

By Hiromichi TSUYA, Ryōhei MORIMOTO and Joyo OSSAKA,

Earthquake Research Institute.

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The course of the recent activity of Mt. Mihara, the summit crater of Oshima volcano, one of the Seven Izu Islands, may be divided into the following four periods:

(1) Period of progressive continuous eruption (July 16, 1950...Sept.

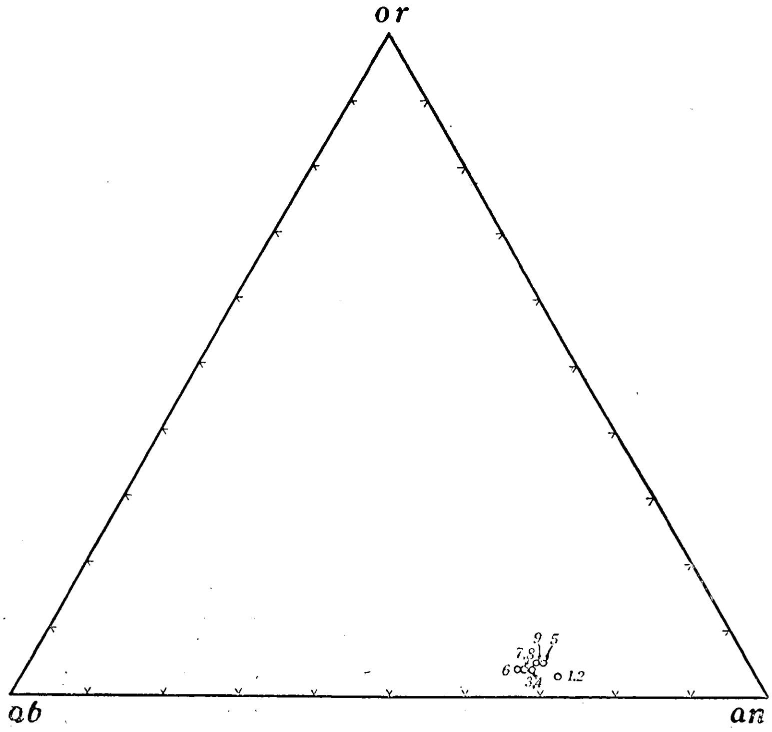

Fig. 1. Compositions of normative felspars of the 1950-1951 lavas and bombs. The figures are same in Table I.

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* This study was carried out with the aid of the Fund for Scientific Research of the Department of Education,

23, 1950.), (2) period of climax of the continuous eruption of larger scale (Feb. 4, 1951...Apr. 1, 1951.), (3) period of intermittent eruption (Apr. 16–19, 20–21, 29, May 1, 3, 6–7, 1951.), and (4) period of explosive eruption (June 9–11, 14–15, 17–18, 19, 27, 1951.).

Petrographic features of the 1951-lavas are quite similar to those of the 1950-lavas which was described in the previous paper[1]. Fixed constituents of the lavas and the fragmental ejecta in 1950–1951 eruption are same during these changing phases of the activity[2]. The results of chemical analyses of the representative specimens of the 1951-lavas and bombs are shown in the following table and plotted in or-ab-an, wo-en-fs, and Q-F-M diagrams (Fig. 1–3).

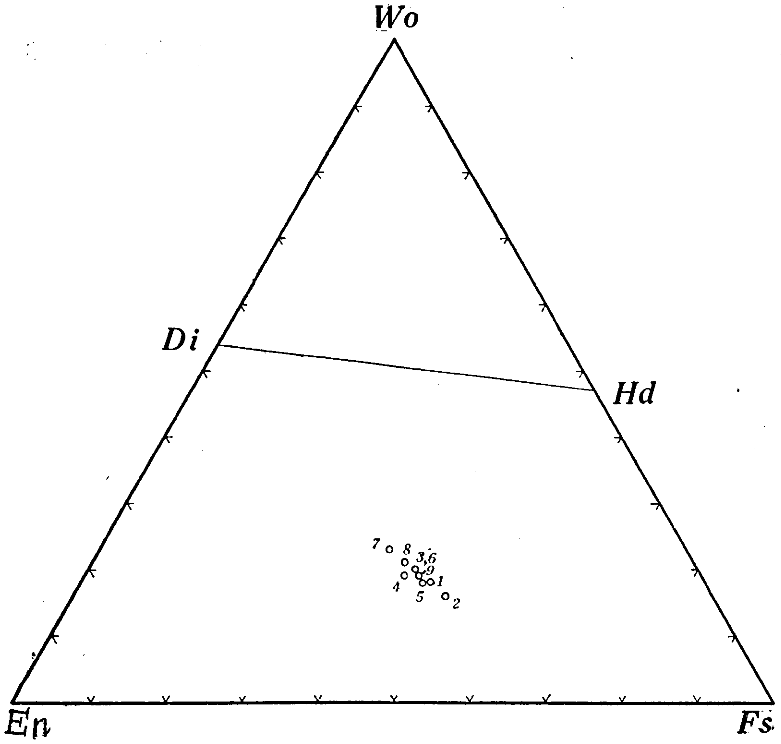


Fig. 2. Compositions of normative pyroxenes of the 1950-1951 lavas and bombs. The figures are same in Table I.

1) H. TSUYA and R. MORIMOTO, *Bull. Earthq. Res. Inst.*, **29** (1951), 563-570.
R. MORIMOTO and J. OSSAKA, *Jour. Geography*, **60** (1951), 136-140 (in Japanese).

2) The pigeonites separated by Dr. H. KUNO from the 1778-lava and from the 1950-lava were analyzed by one of the writers (J. O.). The groundmass pigeonites in both lavas are quite similar in its mean chemical compositions. The results of the analyses will be reported in the other day.

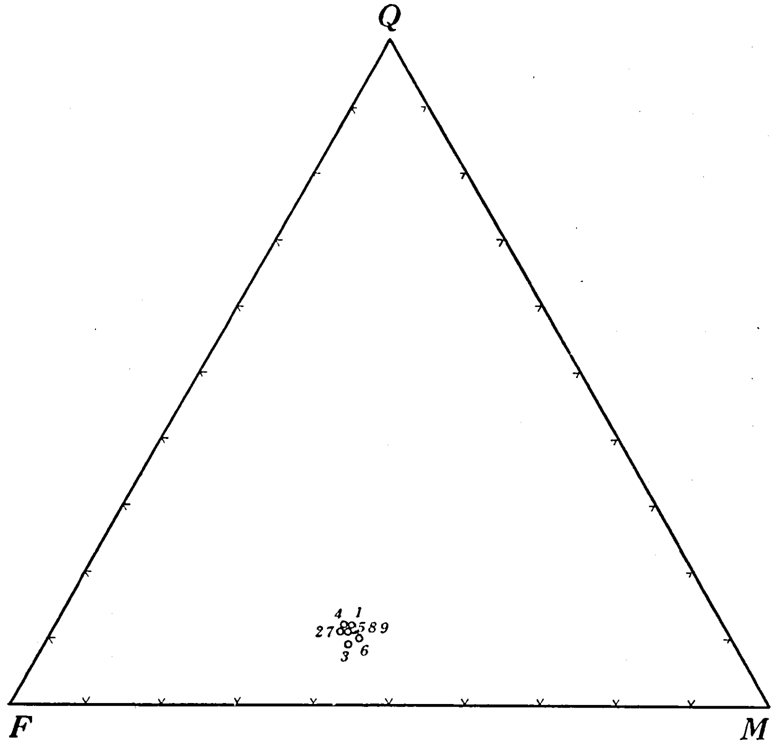


Fig. 3. Q-F-M diagram of the 1950-1951 lavas and bombs. The figures are same in Table I.

Table I. Chemical composition of the lava and bomb of 1951-eruption.

Constituents	5	6	7	8	9
SiO_2	52.30	52.43	52.24	52.34	52.44
Al_2O_3	15.50	15.01	15.41	15.21	15.44
Fe_2O_3	2.96	2.87	4.21	3.54	3.16
FeO	10.26	10.52	8.97	9.75	10.11
MgO	4.64	4.81	4.51	4.66	4.66
CaO	9.65	9.73	9.98	9.86	9.74
Na_2O	1.61	1.79	1.77	1.78	1.66
K_2O	0.33	0.35	0.34	0.35	0.33
H_2O+	0.70	0.28	0.42	0.35	0.59
H_2O-	0.21	0.08	0.11	0.10	0.17
TiO_2	1.49	1.57	1.30	1.44	1.47
P_2O_5	0.09	0.14	0.16	0.15	0.12
MnO	0.10	0.12	0.10	0.11	0.10
	99.84	99.70	99.52	99.64	99.99

Norms

Quartz	10.75	10.14	11.29	10.53	10.78
Orthoclase	2.23	2.06	2.00	2.06	1.95
Albite	13.63	15.15	14.99	15.05	14.05
Anorthite	33.93	31.87	33.10	32.49	33.71
Wollastonite	5.46	6.46	6.42	6.43	5.80
Enstatite	11.54	11.98	11.22	11.60	11.60
Ferrosilite	13.98	13.78	11.03	12.81	13.71
Magnetite	4.40	5.53	6.11	5.14	4.58
Ilmenite	2.88	2.99	2.47	2.73	2.79
Apatite	0.33	0.33	0.36	0.36	0.26
NF or	5	4	4	4	5
NF ab	27	31	30	30	28
NF an	68	65	66	66	67
NPy Wo	18	20	23	21	19
NPy En	37	37	39	38	37
NPy Fs	45	43	38	41	44
QFM Q	11	10	11	11	11
QFM F	50	49	51	50	50
QFM M	39	41	38	39	39

Modes*

Plagioclase	6.7	8.0	6.3	7.2	6.9
Hypersthene	0.4	tr.	0.2	0.1	0.3
Augite	0.2	1.1	0.1	0.6	0.4
Groundmass	92.6	90.9	93.4	92.1	92.4

5. Mean of four chemical analyses of the 1951-lavas and bombs. Anal. J. Ossaka. (Cf. H. Tsuya and R. Morimoto, *op. cit.* 564. R. Morimoto and J. Ossaka, *op. cit.* 137.)
6. The basalt solidified on March 22, 1951 at the front of lava flow approaching to the inner wall of the somma near Goshinkachaya (SO 51032201). The temperature and the viscosity of the lava were measured by Dr. Minakami and his collaborater (Cf. T. Minakami, *Bull. Earthq. Res. Inst.* **29** (1951), 487-498). The writers thank Mr. S. Ohya, a student of the Geological Institute of the university for his offer of the specimen. (Cf. Fig. 4 a-b.) Anal. J. Ossaka.
7. The bomb ejected on Kengamine June 14, 1951 (HT 51081601). Thin film of iron oxides coats the surface of the tabular ellipsoidal bomb. The result shows the mean composition of the bomb. Anal. J. Ossaka. (Cf. Fig. 5 a-b.) The writers owe much to Miss. F. Toraiwa for her assistance in chemical analyses of the rock.
8. Mean of 6 and 7.
9. Mean of 1, 2, 3, 4, 6, and 7. (Cf. Table I of the previous paper. H. Tsuya and R. Morimoto, *op. cit.* 564.)

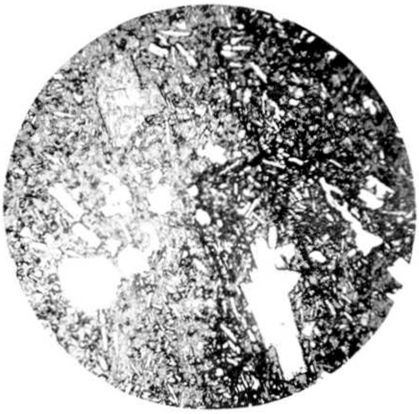
* Percentage in volume.

As revealed in Table I, the chemical composition of these specimens are quite the same, within the experimental errors to be expected during the procedures of the silicate analyses, except for iron oxides. The values of ferrous iron oxide and of ferric iron oxide are different in each analyzed specimen; the latter is always high in bombs or in the scoriaceous surface of the lavas and low in the inner part of the lavas; while the values of total iron are almost constant in each specimen (Table II).

Table II. Values of iron oxides and of total iron in the analyzed specimens of the 1950–1951 lavas and bombs.

Specimen Nos.	1(B)	2(L)	3(L)	4(B)	6(L)	7(B)
Fe_2O_3	2.78	2.28	2.92	3.84	2.87	4.21
FeO	10.56	10.80	10.22	99.46	10.52	8.97
Fe_2O_3*	14.51	14.28	14.27	14.35	14.56	14.18

* Total iron calculated as ferric oxide. (B)....bomb, (L)....lava.



a. Polarizer only

b. With analyzer inserted

Fig. 4. Photomicrographs of the 1951-lava. (× ca. 40).

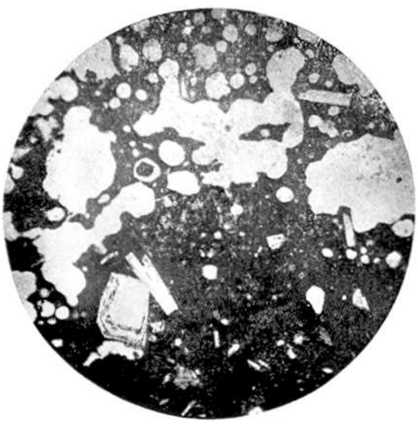


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Fig. 5. Photomicrographs of the 1951-bomb. (×ca. 40)

It may be allowed to say that the distribution areas of the small circles plotted on the diagrams (Fig. 1–3) will afford a clue finding out practically an appropriate diameter of circle, by which the results of bulk analyses of lavas of geological age may be expressed on some given diagrams.

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20. 伊豆大島三原山 1951 年熔岩の化学成分

地震研究所 { 津屋弘逵 / 森本良平 / 小坂丈予

伊豆大島三原山の 1951 年の活動中に噴出した熔岩及び火山彈の代表的な標本についての化學分析結果を，すでに報告した 1950 年噴出の熔岩及び火山彈の分析値とあわせて記載した．
