The problem of diamondbearing in Syria

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On the territory of Syria, quite definites for diamond prospecting exist. Out of these prerequisites are: 1) the peculiarities of the geological setting of the region, 2) presence of the kimberlite like rocks diatremes containing xenoliths of deep material and 3) the findings soft minerals-satellites of diamond itself in stream sediments.

The territorry of Syria is a part of the African-Arabian platform. Rupture disturbancec play a significant role in its setting. The largest of these is the Lebanon-Syrian fault which is the northern continuation of the deep-fault zone of the Gulf of Agaba-Dead Sea. In order for diamond deposits to form the presence of an interruption in sedimentation the appearance of continental regime is necessary. In Syria, such a situation was twice on the boundary of Jurassic and Cretaceous as well as the Paleogene and Neogene.

The diatremes of the Kimberlite like rocks of Cretaceousage are widely distributed around the Coastal mountain rang to the west of the Levant fault. The chemical composition of these diatremes is shown in (table 1).

In Al-Nabi Matta diatreme, deep-seated xenoliths of garnet granulite and eclogite (garnet pyroxenite) are encountered. The chemical composition of these xenolths is shown in table (2).

Presened are data on the composition of these minerals. They wereobtained by the author together with the group of Pokhilenko bmeans of rentgenspectral microanalylsis carried out in IGG SBAS USSR.

Garnet. As is shown in (tabl.3), the majority of garnet points lies in the field of garnet peridotites.

Ilmenite - it is clear that only 2 compositions of picroilmenite taken in the area of Syrian desert approach the number of kimberliete rocks (tabl 4).

Cr-Spinel (Table 4). The most interesting compositions of chromites arerevealed in the area of Kadmus (table 4, analyses 2) and the area of Aleppo table 4 analyses 2-3) and which entirely lie in the field of diamond-bearing rocks.

Thus, the available data prove that single minerals corresponding in composition to diamond Satellites and other grains - to diamond itself. Hence, the territory of Syria is considered a prespctive region for diamond prospecting

Table 1. The chemical compositions of pyroclasis from the diatreme: Muhelbe, Kadmaus, Aj Rband, Jlagi.

	Muhelbe			Kadmaus		AJ Rband	Jlagi
	1	2	3	4	5	6	7
SiO_2	28.7	35.30	49.20	18.01	26.03	32.00	28.67
TiO_2	1.78	0.84	1.42	0.38	1.68	2.3	1.9
Al_2O_3	7.20	9.61	15.59	5.40	7.85	11.00	5.00
Cr_2O_3	0.023	0.058	0.065	-	-	-	-
Fe_2O_3	5.02	5.00	4.14	4.40	4.29	8.83	18.04
FeO	3.13	4.23	3.94	-	-	4.38	-
MnO	0.11	0.22	0.13	0.13	0.12	0.13	0.25
MgO	12.71	17.45	10.48	9.78	3.22	6.38	21.79
CaO	17.95	9.44	5.87	22.45	21.22	15.93	10.43
Na_2O	0.36	0.70	2.02	0.15	0.26	3.11	0.30
K_2O	0.90	0.96	2.80	0.66	1.65	1.45	0.81
P_2O_5	0.38	0.50	0.17	0.63	0.72	0.40	1.68
V_2O_5	0.021	0.023	0.024	-	-	-	-
NiO	0.026	0.021	0.014	-	-	-	-
CoO	0.006	0.006	0.005	-	-	-	-
CO_2	12.77	6.43	0.36	-	-	-	-
SO_3	-	0.036	0.045	32.20	27.41	11.24	16.10
H_2O	9.05	9.01	4.43			4.89	
Total	100.34	100.14	100.70	100.99	100.45	99.75	99.97

Table 2. The chemical composition of eclogites and garnet granulites from Muhelbe

	Eclogites		Garnet	Granulites
	1	2	3	4
	125-15	138-8	138-7	75-9
SiO_2	44.54	40.46	46.62	46.78
TiO_2	1.48	4.53	3.32	0.32
Al_2O_3	10.74	14.28	15.32	18.01
Cr_2O_3	-	0.083	0.056	-
Fe_2O_3	3.45	5.79	3.13	1.44
FeO	5.08	12.24	6.93	4.22
MnO	0.12	0.19	0.17	0.12
MgO	14.22	10.54	7.28	9.87
CaO	14.51	8.01	11.32	15.67
Na_2O	0.79	0.96	2.62	1.40
K_2O	0.23	0.94	1.08	0.40
P_2O_5	0.084	0.02	0.51	0.04
V_2O_5	-	0.04	0.041	-
NiO	-	0.042	0.009	-
CoO	-	0.009	0.006	-
CO_2	0.11	0.11	0.07	0.11
SO_3	0.054	-	0.31	0.03
H_2O	4.39	1.33	3.35	1.63
Total	99.79	99.61	100.01	99.94

Table 3. Partial chemcal analyses of garnets in some diatremes of Syria.

	Jlagi				Job-AJ-Aswad				Kadmus			
N	Cr_2O_3	MgO	CaO	FeO	Cr_2O_3	MgO	CaO	FeO	Cr_2O_3	MgO	CaO	FeO
1	0.03	17.77	5.21	11.70	1.02	21.00	4.77	7.81	0.74	20.59	4.97	7.84
2	0.17	19.68	5.10	9.11	0.55	20.79	4.80	7.68	0.17	20.82	5.34	7.00
3	0.16	19.33	4.85	9.27	0.05	14.78	8.23	8.37	1.04	20.99	5.03	6.97
4	0.11	19.22	4.87	9.35	2.22	21.75	5.23	6.83	1.12	20.49	5.14	7.49

Table 4. Partial chemical analysesof the Cr-spinels and ilmenites from stream sediments

	Alappo				Syrian Desert				Kadmus			
	Chromite				Ilmenite				Chromite			
	1	2	3	4	1	2	3	4	1	2	3	4
Cr2O3	54.69	62.49	62.70	61.57	0.00	0.00	0.00	0.00	61.89	63.74	60.64	51.98
MgO	10.29	9.68	6.05	9.66	0.30	0.08	0.30	0.16	10.19	8.23	10.41	10.87
Al2O3	12.10	8.59	7.05	8.26	1.07	1.09	0.99	0.94	6.91	3.46	8.51	5.59
TiO2	0.08	0.08	0.04	0.04	61.59	56.30	63.89	56.91	0.06	0.05	0.03	0.02

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