

■ URALIAN GOLD NUGGETS OF THE 20th CENTURY IN THE DIAMOND FUND OF RUSSIA

Vasiliy N. Orlov, Irina B. Taishcheva,
Gokhran of Russian Federation

We have already described to our readers the gold nuggets from the Diamond Fund of Russian Federation (Orlov, 2008). During five years since that publication, we continued our study and received new data on history and fate of many gold nuggets discovered in the Urals in the 20th century. We believe that the readers will be interested in new facts, some published for the first time. This publication, as well as the previous one, is a kind of guidebook to another important part of the Diamond Fund exposition.

It is a great loss that between the nuggets of the 19th and 20th centuries is the 90 year long gap, during which not a single gold nugget was documented. Gold mining was for sure going on, but all gold was most likely refined.

At the moment, the exposition of the Diamond Fund has 29 nuggets, discovered in the Urals in the 20th century. The history of their discoveries as well as their fate is interconnected to the history of gold mining in Russia.

Chaos after the October 1917 Revolution and following the 3-year-long Civil War almost destroyed the Russian economy. Many branches were totally collapsed. As to the gold industry, it was practically at zero level by the 1920s, requiring imminent effective measures to restore this important industry.

And they were undertaken by Alexander Pavlovich Serebrovskiy, a talented organiser and an professional mining engineer, who was appointed as its head. For the favourable economic climate in the industry, laws and regulations have been adopted aiming to stimulate exploration works in the new regions of Russia as well as in the “classic” gold producing regions, such as the Urals. The first official document on gold industry was issued on the 31st of October 1921 (Decree, 1921). It preserved the state monopoly, but allowed all citizens, cooperatives, and other organizations to conduct exploration and mining of gold, as well as to sign the agreements with the state and to manage exploitation of the state gold mining enterprises (Serebrovskiy, 1936). The resolution of the Council of People’s Commissars (that was the name of the Russian government at a time) of the 4th of June 1927 declared incorporation of the All-Union State Gold Joint Stock Company called *SoyuzZoloto*. It comprised all gold enterprises of the country.

To employ the best contemporary practices for the new *SoyuzZoloto* corporation, Serebrovskiy went to the USA to study the advanced technology. The delegation visited Colorado and other gold mining districts. Upon return to Moscow, Serebrovskiy ordered to establish special factories for manufacturing the special equipment for gold industry. Exploration was organized at many localities. Infrastructure of the mines was to be newly established, as well as transport and supplies. These measures helped to increase gold production by the mid-1930s to the level, which was several times greater than before the October 1917 Revolution. New rich gold deposits and prospective

Figure 1. Gold nugget
"Nugget of the Kalinin Gold Trip".
17.3 x 14.4 x 6.8 cm, weight
13 776.6 grams. Diamond Fund # 413.
Found December 15, 1935 in the Kosoi
Brod area, Sysert' mining administration,
UralZoloto trust.

Anhedral segregation. Perfectly rounded. The smooth sinuous outlined nugget is elongated lenticular plate with softened comb-like ledges. The corrugated surface is complicated by hollows of varied shape: pocket-type, isometric, or slightly extended along the long axis of the nugget (size 0.3 x 0.5 to 1.2 x 2.0 cm; depth 0.2 to 1.3 cm), fissured (length 2.0 to 5.0 cm; width 0.3 to 0.5 cm; depth 0.2 to 0.5 cm) with regular distributed fragments of imprints of calcite crystals. Small cluster of smoothed granular-shaped segregations of up to 0.2 cm in diameter are in one of the pocket-type hollows.

provinces have been discovered. In the Urals, many new deposits have been found in the Central and Northern Urals (Zaozerskie, Kytlym, Kosva, and Iss Goldfields). Nizhniy Tagil, Neviansk and Sysert' Goldfields have been firmly established. It was time of the second life for the famous Berezovskoye deposit and placers of the Miass district.

Significant revival of gold production was recorded in the Miass' Leninskiy area (former Tsareo-Alexandrovskiy Goldfields), in particular. A dredge started to operate at the Tashkutarganka River, progressing upstream to the nugget-rich area. During this move, it was producing coarser gold, with greater number of gold nuggets. Between 1947 and 1965, geologist Dryazgov was working at the Leninskiy area. Upon his initiative, the geologists recorded not only weight, but also shape of the nuggets, with systematic registration in the special journal. During 18 years, the journal included 504 nuggets with total weight of 95 kg and 863 grams (Smolin, 1970). Their small fraction is now in the Diamond Fund.

This publication contains information on gold nuggets from the showcases of the Diamond Fund, discovered in the Central and Southern Urals between 1920 and 1969.

Let us start from the nuggets discovered in the Central Urals (*Figures 1, 5, 6, 7, 8*). The largest nugget is called *"Nugget of the Kalinin Gold Trip"* (*Figure 1*).

"Nugget of the Kalinin Gold Trip". This nugget is the largest nugget on Diamond Fund exposition recovered from the Urals placers in Soviet times. Its size is 17.3 x 14.4 x 6.8 cm and its weight is 13,776.6 grams (Diamond Fund # 413, *Figure 1*). It was found on the 15th of December 1935 in the territory of the Sysert' Administration of the *UralZoloto* Trust. The nugget was recovered at the Kosoi Brod (meaning "Oblique Ford" in English) site (*Figure 2*), in the Kanava Valley, in the right part of the Nikolskiy Log placer, a right tributary in the upper part of the Chusovaya River, 12 km to the northeast from the town of Polevskiy in the Polevskiy district of the Sverdlovsk Oblast. The nugget occurred in the

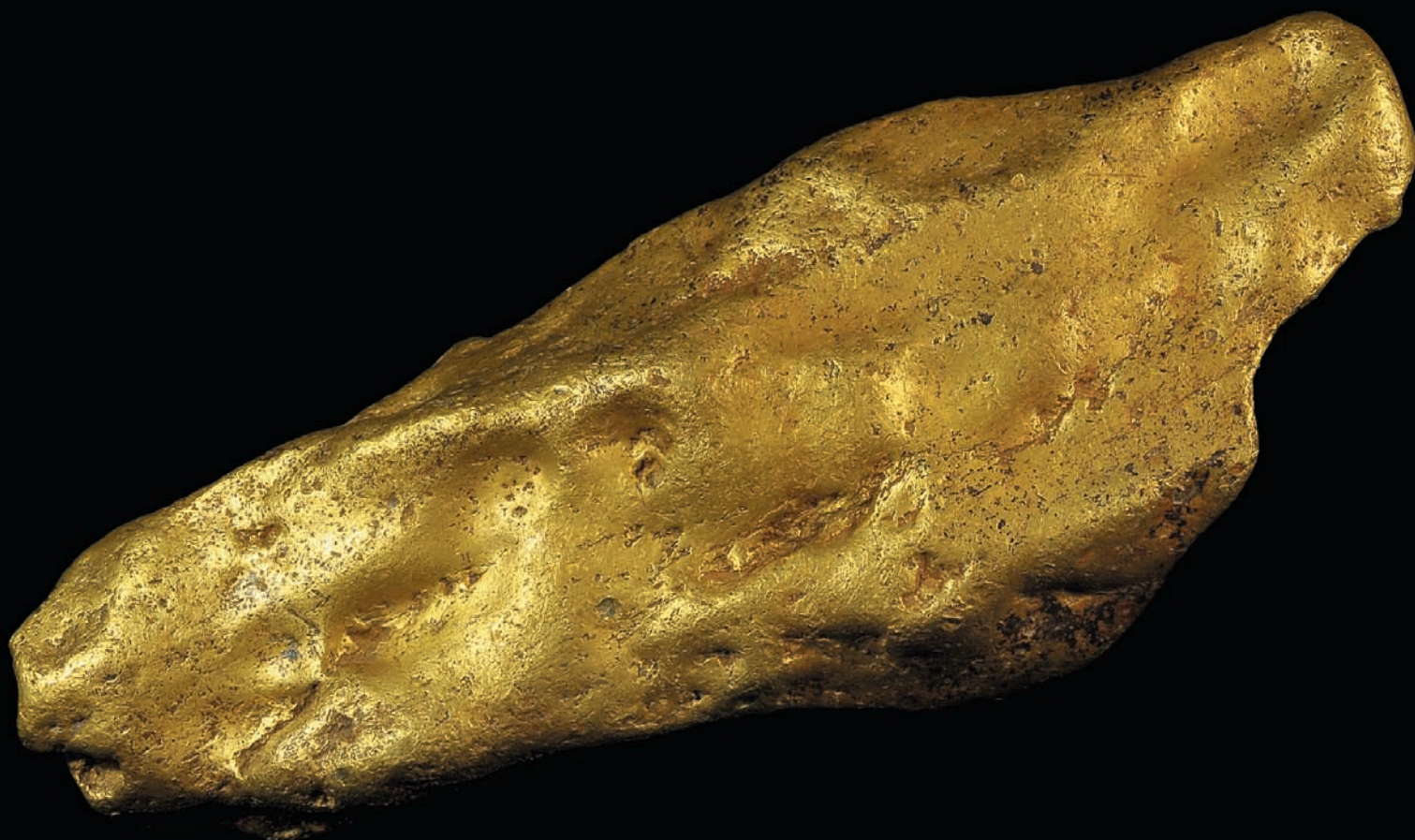


Figure 11. Gold. 6.2 x 4.1 x 3.1 cm,
weight 196.8 grams.
Diamond Fund # 744. Found in 1958.

Combined segregation. Partially rounded nugget. Lenticular, angular, slightly elongated, with a few kidney-shaped branches (size 0.7 x 0.5 x 0.5 to 1.6 x 0.8 x 0.6 cm) on the one side and pyramidal ledge (size 1.2 x 1.1 x 1.0 cm) on the other side. It looks like the shell similar to that of Rapana. The nugget is a cluster (about 45% of the area) of cubeoctahedral crystals (size 0.3 x 0.2 x 0.2 to 0.5 x 0.3 x 0.3 cm) and granular-shaped segregations (size 0.3 x 0.2 x 0.2 cm) on the anhedral base. Crystals are smoothly outlined. The nugget is pierced by the numerous holes (portion of cm to 0.2 x 0.15 cm in size). The surface is hummocky-pitted, cavernous in places, partially smoothed, porous, and with the imprints of rhombohedral calcite crystals (size 0.5 x 0.3 x 0.2 to 0.9 x 0.7 x 0.6 cm) and sporadic crystals of quartz (0.2 to 0.4 cm across). Caverns and hollows between crystals are angular, fissured, and cave-shaped (size 0.4 x 0.3 to 0.9 x 0.3 cm; depth up to 1.3 cm). Films and crusts occupy about 2% of the surface.

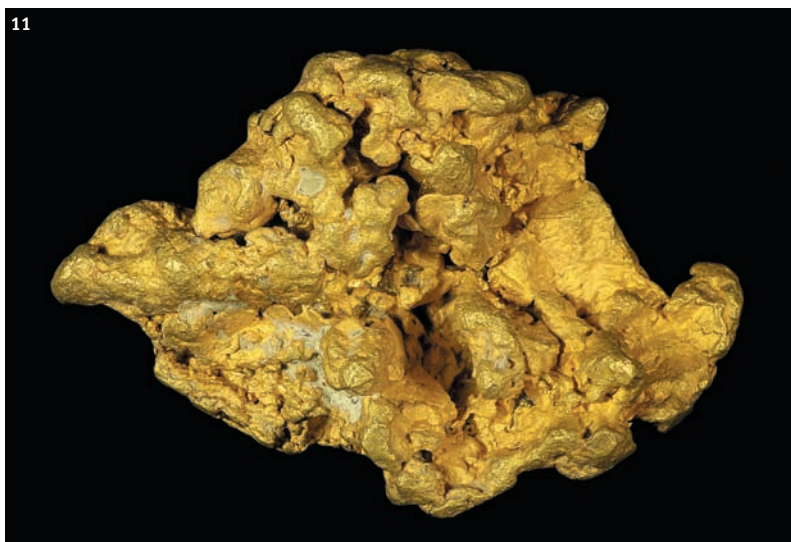


Figure 12. Gold. 7.8 x 4.1 x 3.3 cm,
weight 517.9 grams.
Diamond Fund # 891. Found in 1958.

Anhedral segregation. Semi-rounded nugget. Cloddy, elongated, angular, with two massive branches (size 1.7 x 1.5 x 1.3 and 2.4 x 2.0 x 1.7 cm). The surface is cavernous, partially smoothed, and corrugated. Caverns are slightly extended (size 0.7 x 0.5 to 2.7 x 1.5 cm; depth 0.2 to 1.5 cm). The imprints of fine crystals of quartz are on the walls of caverns (size 0.1 x 0.1 to 0.3 x 0.2). Films and crusts occupy about 15% of the surface.



Figure 13. Gold. 7.0 x 5.6 x 3.2 cm,
weight 344.4 grams.
Diamond Fund # 892. Found in 1958.

Anhedral segregation. Weakly rounded nugget. Lenticular, slightly elongated, with two small cloddy ledges (size 1.4 x 0.7 x 0.6 cm, 1.0 x 1.0 x 0.7 cm). In plan view, it is distorted triangle with three branches (size 0.7 x 0.6 x 0.5 cm, 1.7 x 1.4 x 1.0 cm, and 1.7 x 1.2 x 1.0 cm). The nugget is pierced by three holes (size 0.1 x 0.1 to 0.5 x 0.2 cm). The surface is cavernous, porous, and hummocky-pitted. Caverns are slightly extended (size 0.6 x 0.4 to 1.4 x 0.8 cm; depth 0.2 to 1.0 cm). The imprints of quartz crystals are retained on the surface. Films and crusts occupy about 2% of the surface. Number of inclusions (quartz) reaches 1%.

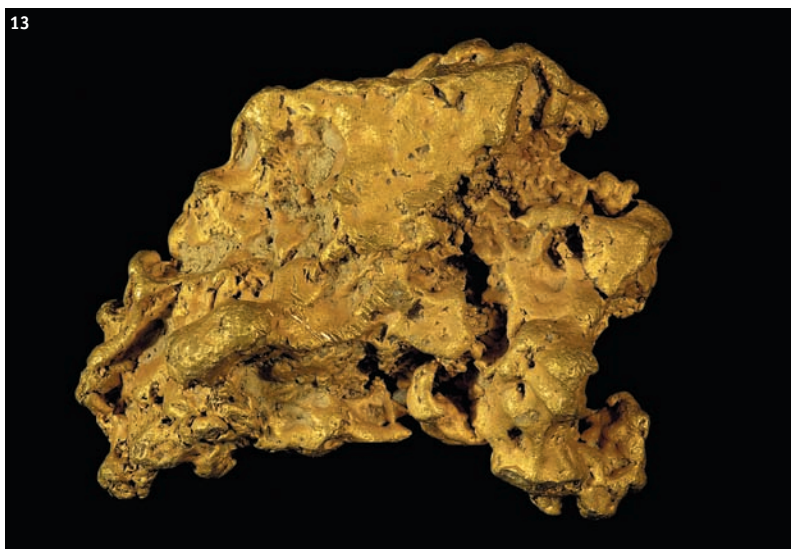


Figure 14. Gold. 6.9 x 5.9 x 3.0 cm, weight 362.0 grams. Diamond Fund # 391. Found in 1953.

Anhedral segregation. Partially rounded nugget. Angular, slightly flattened, with four branches (size 1.8 x 1.4 x 1.1 cm, 1.9 x 1.8 x 0.6 cm, 2.7 x 2.0 x 1.7 cm, and 3.0 x 2.1 x 1.2 cm), and pierced by two holes (size 0.4 x 0.3 cm). The nugget resembles butterfly in plan. The surface is uneven, smoothed and cavernous in places. Caverns and hollows are smoothed-angular, funnel-shaped, bowl-shaped (size 0.3 x 0.2 to 0.9 x 0.7 cm; depth 1.2 to 1.4 cm), and fissured (size 0.7 x 0.2 to 1.8 x 0.3 cm). Fragments of imprints of rhombohedral calcite crystals (size 0.2 x 0.15 to 0.3 x 0.2 cm) are retained on the walls of caverns and hollows. Films and crusts occupy about 1% of the surface.

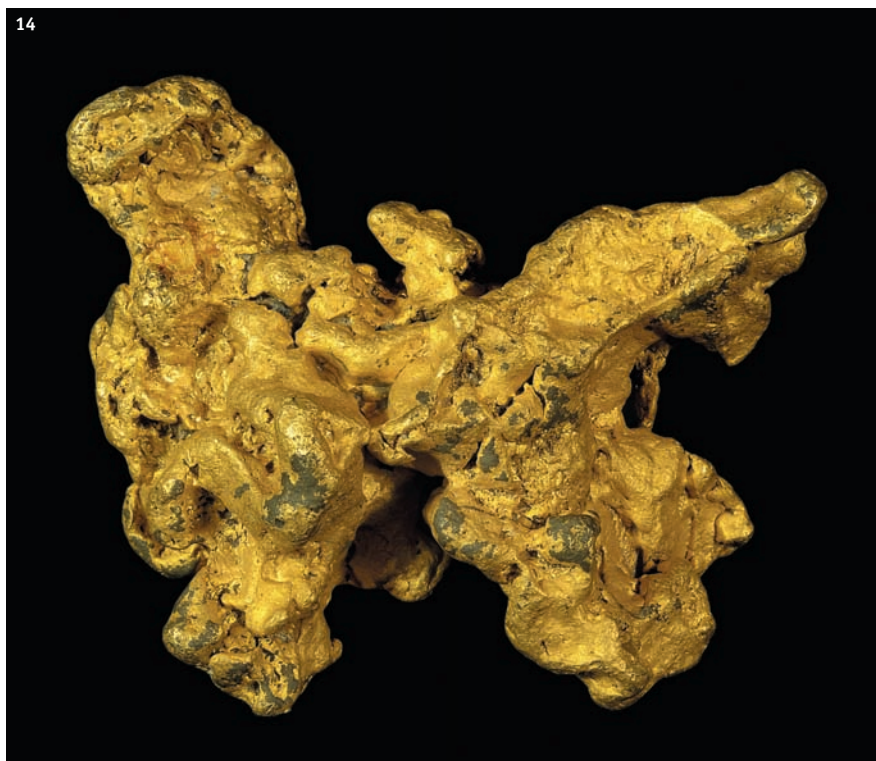


Figure 15. Gold nugget "Fir". 11.6 x 6.3 x 1.9 cm, weight 199.9 grams. Diamond Fund # 105. Found October 13, 1946 by prospector Lobushkin in the foot wall of the Elizavetinskaya vein at depth of 58 m, mine no. 7, southern part of the Kochkar deposit located in the Kamenka Valley, left tributary of the middle course of the Sanarka River south of the Plast town. The Kochkar deposit have been operated since 1845. In 1948, M.N. Albov drew this nugget and made first description for the first time (Albov, 1960).

Euhedral segregation. Not rounded nugget. This is the rarest unique gold-copper compound, cuproauride, is two-dimension one-trunk dendritic aggregate overgrown by crystals (15% of the surface). The trunk of 11.6 cm in length is slightly curved. The branches ranging from 1.8 to 3.0 cm in length complicated with small arms of 0.2 to 1.0 cm in length diverge from it to two sides according to the lattice law. The most separated crystals (nine) are in the central part of the nugget. Three groups of 2 to 3 crystals occur in the lower part of the nugget. The crystals are isometric cubic ranging from 0.25 x 0.2 x 0.2 to 0.8 x 0.6 x 0.5 cm in size; the elements of rhombododecahedron are probable. In addition, elongated (size 0.4 x 0.3 x 0.3 to 0.8 x 0.4 x 0.3 cm), tabular (size 0.9 x 0.9 x 0.2 cm), and wire-shaped (length 0.5 cm) crystals and well prepared lamellar segregations of gold occur in the different places. The surface is rough and hummocky. Films and crusts occupy about 5% of the surface. Number of inclusions (quartz and tourmaline) reaches 80%. Owing to branched shaped the nugget was named "Fir".