INTRODUCTION

Soil classification is necessary for scientific and applied investigations related to the assessment of land resources, the compilation of soil maps, and the adequate regulation of soil fertility. The first soil classification system for Azerbaijan was proposed by S.A. Zakharov [10] and was then considerably improved by A.N. Dimo, V.P. Smirnov-Loginov, V.R. Volobuev, I.A. Aliev, M.E. Salaev, and other scientists.

The systematized list of soils of Azerbaijan was an important contribution to the classification. It was compiled at the final stage of the land inventory of the republic and the compilation of the soil map of Azerbaijan on a scale of 1 : 200 000 [17].

The list of soils was discussed at the Dokuchaev Soil Science Institute of the USSR Academy of Sciences in 1966 and tested during the Transcaucasian Symposium on the Problems of Nomenclature and Classification of Transcaucasian Soils. The final version of the systematized list of soils of Azerbaijan was published in 1969 in Izvestiya AN AzSSR [1].

After that, more detailed soil system and soil nomenclatures were elaborated on the basis of a comprehensive analysis of the results of large-scale soil surveys in Azerbaijan. The new list included 1600 soil names. The names of soils of dry subtropical steppes and hydromorphic and irrigated soils of Azerbaijan were improved and added to [19].

Special studies of the energy of pedogenesis and the ecology, composition of organic matter, agrophysical characteristics, and mineralogical composition of Azerbaijani soils were conducted. In a generalized form, the results of these studies were taken into account during the preparation of the new soil classification system of the Soviet Union [11].

An improved variant of the classification of Azerbaijani soils was also developed [18]. This classification system was based on the properties and regimes of soils with due account for the soil-forming factors. It differed from the previous classification by a new ecologic-genetic concept and a more detailed system of soil taxa [1].

This classification system has been successfully used for soil investigations and mapping in Azerbaijan up to now.

At present, the development of international cooperation in different sciences, including soil science, poses the problem of the creation of a new soil classification system that should be based not only on the regional and national classification concepts but also linked with the internationally accepted soil classification systems.

We have made an attempt to elaborate a classification of this kind.

The proposed Azerbaijani soil classification system is based on the concepts of the types of soil formation adopted in the Russian school of soil classification.

The World Reference Base for Soil Resources (WRB) [29, 30] and the Russian Soil Classification System [25] are the main documents used at present for soil mapping purposes, creation of the soil information base, and soil assessment.

The World Reference Base for Soil Resources [29, 30] was developed on the basis of the legend to the FAO–UNESCO Soil Map of the World [28], and it is not a proper soil classification. It is aimed at the correlation of national soil classification systems.
The new classification of Russian soils [25] is based on the soil classification system elaborated by V.M. Fridland [22, 23]. In essence, it is a substantive-genetic soil classification system, i.e., it is based on the morphology and properties of soil profiles as reflecting the character of soil-forming processes. The highest levels of the classification (soil orders and soil types) are distinguished with respect to a characteristic set of interdependent genetic horizons and diagnostic soil properties formed by the particular processes [21].

Classification units are specified with respect to diagnostic soil horizons determined on the basis of their qualitative morphological and chemical characteristics. Quantitative characteristics are also used when necessary.

National and world soil classification systems are being continuously improved and refined, as well as the soil nomenclature; many countries use the soil names suggested in the most popular soil classification systems along with national, regional, and local soil names.

**RESULTS AND DISCUSSION**

Azerbaijan is characterized by a great diversity of natural and anthropogenically transformed landscapes. The vertical natural soil zonality is complicated by the agrogenic factor of soil formation. It includes forest cutting, grazing pressure, intensive land use with water and chemical amelioration, and technogenic disturbances of the soil cover.

These conditions require a new approach to soil classification [26, 27]. It is based on the concept of soil appreciation as a natural object that is constantly transformed under the impact of natural factors of pedogenesis and anthropogenic activity.

Following the modern classification of Russian soils [25], the new classification of Azerbaijan soils is based on the genetic principle with due account for soil evolution. It is developed as an open hierarchical system based on the profile-genetic concept, which makes it possible to consider both natural and anthropogenically transformed soils within the unified system of soil classification.

The new classification naturally absorbs and develops the positive features of previous soil classification systems; traditional national soil names are preserved in it.

Prior to elaboration of the new Azerbaijan soil classification system, a complete systematized list of soils was compiled on the basis of the explication to the soil map of Azerbaijan on a scale of 1 : 100 000 [8], which characterizes in detail the spatial distribution of different genetic soil groups [2].

The new soil classification system includes a number of additional divisions in comparison with the previous classification [18]. In particular, the classes of anthropogenically transformed soils and technogenically disturbed soils (polluted with oil and disturbed upon mining) are included into it.

The correlation of the soil units distinguished in the new national soil classification with the soil units of international soil classification systems is important for the more efficient use of the new classification in the republic and abroad.

The taxonomic soil units are determined in terms of the characteristic morphogenetic features of the soil profile. The highest levels of the classification are soil classes and soil orders.

- **Soil class** is the taxonomic unit of the highest level. It is specified by the ratio between the natural and anthropogenic soil-forming processes in the soil development.

- Three soil classes are distinguished: (A) naturally evolved, (B) anthropogenically transformed, and (C) technogenically disturbed soils (table).

- **Soil orders** include soils with similar soil-forming processes and morphology of their profile, i.e., the sequence of genetic horizons related to the environmental and anthropogenic factors of soil formation.

- The class of naturally evolved soils includes all the natural soil types with similar leading soil-forming processes. The orders distinguished in this class correspond to the notions of the types of soil formation, soil associations (as suggested by Volobuev and Kovda) [5, 6, 14], soil families (as suggested by Glazovskaya) [7], or large soil groups (as suggested by Sokolov) [20].

- The following soil orders are distinguished in the class of naturally evolved soils.

- The order of soddy organic-accumulative soils includes well-drained soils with pronounced accumulation of organic matter and the formation of soddy horizons in which living or dead plant roots are abundant. Upon high soil moistening and relatively low temperatures, the humification of plant remains is retarded and raw-humus horizons are formed.

- Usually, the B horizon is weakly expressed. The soils are skeletal and are formed on slopes in high-mountain alpine and subalpine zones.

- The order of soddy organic-accumulative soils includes the type of mountainous meadow soils subdivided into primitive, soddy–peat, and soddy subtypes.

- The order of texture-differentiated soils encompasses soils with a pronounced redistribution of mineral particles in the soil profile. The redistribution is caused by a set of interrelated elementary processes, including active deep weathering, intensive leaching, organic matter decomposition, and leaching of bases and clay and colloidal particles in the form of organomineral and mineral compounds.

- Soils of this order are formed in the semihumid subtropical zone of Azerbaijan. Their textural differentiation is due lessivage differentiating the soil profile into the light-colored and coarse-textured eluvial (EL) horizon and the heavy-textured illuvial BT horizon with the accumulation of clay particles. The types of mountainous brown forest soils, mountainous yellow-brown for-