AN ATTEMPT TO A FILETIC CLASSIFICATION OF VALACHIAN (ZACKEL) AND TSIGAIA BREEDS

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The management of domestic animal genetic resources implies an inventary of all distinct genetic populations. Scientificaly, the inventory is a Taxonomical problem and it implies three steps: (a) the establishment of operational taxonomic units for domestic animals (OTU); (b) the establishment of criteria for the approval of OTU; (c) the classification of OTU.

The accepted basic OTU for domestic animals is the breed (pure local, halfbreed) generally a communal aggregate of genetic populations which actually do not interbreed at random. For a filetic group of breed it is proposed the term "superbreed" and for a genetic population within breed ("deme" of Gilmour and Gregor 1939, or "small group" of Lush 1945) the term "line" ("pure", moderate inbreed, inbreed, stable or, for local populations subbreed); types and variety are not OTU (Draganescu, 1975-1979).

To three classical sistematical criteria (reproductive isolation, morpho-physiological differences and ecological differences) the addition or effective number of the population is proposed (Draganescu, 1975).

The biological classification of OTU can be constructed on the basis of various kinds of data, of relationahips between organisms: (1) fenetic, breeding, ecological relationships; (2) phylogenetic or cladistic relationships; (3) genetic (genomic) relationships.

Extensive classifications of domestic animals of course allready exist. Pallas-Nathusius-Cirvinski (Ivanov, 1947) proposed a classification based on comparative morphology of tail. Mason, Simon, used a phenetic classification taking also into-account some historical and geographical data. Kruger (in Hammond 1961) and Ryder, 1966 made some phylogenetical tree of breeds. The problem of a correct and modern clasification of sheep breeds is however still open, especially for Valachian (Zackel) and Tsigaia sheep of central and SE Europe. We use the term "Valachian" breeds instead of "Zackel", because the name Zackel doesn't design in any country a breed, but at least in five countries a Valachian breed is named Valachian (Valach is the old nick name of Romanian).

Our work is an attempt to make a phylogenetic, a cladistic tree of Valachian and Tsigaia breeds and thus a filetic classification of it. We accept that the best biological classification of breeds is one that reflect the phylogenetic relationships among them and we tried to do it by using historical, some comparative phenetic and breeding data. In view of the limitation of phenetical and historical data, of

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STOČARSTVO 48:1994 (9-10) 395-401

many unclear aspects of used taxonomic units, of approval of OTU, of repeated change of name of breeds, a correct classification of its is very difficult in this moment, but it is necessary as a basis for further researches. It is also imperative to supplement the comparative morphology and history by using immunological and most especially molecular tehnique which allows to discuss the more controversial questions, the times of divergence, the rate of evolution and the major grouping.

Factor affecting the apparition of Valachian and Tsigaia breeds

The Valachian and Tsigaia breeds, native sheep of Central and SE Europe, descend from Ovignei arkar, wild sheep (Adametz, Kronaker) or other wild sheep (Ryder, 1966), Valachian breeds having by his craniometric characteristics some Mufloi influence and perhaps being more recent domesticated (Moldoveanu, 1937). Valachian sheep is generally accepted as derived from old Scythian and Thrakian sheep and Tsigaia from Asia Minor, famous in 500 BC for a fine woolled sheep (Nica, 1962). It is posible however an other hypothesis.

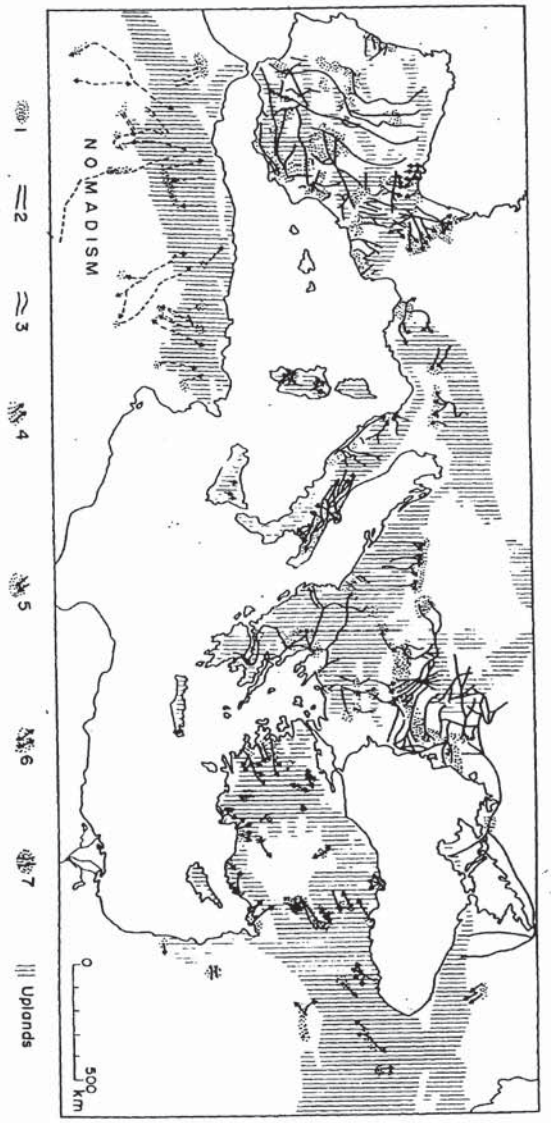
Transhumance, one of sheep production system of SE Europe, confonded manytimes with nomadism or migration, is perhaps native from Spain, France and Italy and was brought in SE Europe by Roman colons. If so, they brought their sheep too (Valachian have some resemblance with Spanish Churro and Tsigaia with Spanish Raso or Cruza). Some imigration from Lop Eared Bergamo sheep is visible in some Tsigaia and Valachian breeds.

It is supposed that the three SE European transhumant centers (Meridional Carpathians, Macedonian and Dinaric - Muller, 1938, Braudel, 1966, Grrigg, 1974) acted as a genetic radiation centers in the formation of the Valachian and Tsigaia breeds (Draganescu, 1994).

We note that in Romania the transhumance, the production system of big shepherds (average some 2000 ewes in 18 th century) was practiced around 1800 by some 150 mountain villages in the North side of Meridional Carpathians (S. Transilvania), 40 of them having significant weight (one village - Rasinari - owned at 1817 1/2 milion sheeps). They owned less than 1% of Romanian land, but more than 20% of sheep (more than 3-4 mil.). Their transhumant roads were to North Caucas, Crimeea, S. Danube (North Balkan), maybe North Carpathians and N Yougoslavia (Fig. 1).

In the Muller transhumance map there are not cross-roads of transhumance centers with one exception - Voivodina, where there was a cross-road of Dinar and Carpathians shepherds. Maybe it was however a cross-road of Dinar and Macedonian shepherds somewhere in Balkan mountains. This can be the explanation of some relatively new imigration through Dinar shepherds of Lop Eared Bergamo sheep in some Tsigaia and Valachian breeds.

Fig. 1. - TRANSHUMANT ROUTES IN THE MEDITERRANEAN BASIN, AFTER MÜLLER, (SOURCE: BRAUDEL. 1966. 88-9)



Key: 1. Winter pastures. 2. Transhumance routes. 3. Direction of transhumance. 4. Normal transhumance (herds belonging to plains- dwellers). 5. Inverse transhumance herds belonging to mountain- dwellers). 6. Normal and inverse transhumance. 7. Double transhumance (herds belonging to people of intermediate slopes). (Grrigg, 1974)

A filetic classification of Valachian (Zackel) breeds

It seems to be three branches (clad) of Valachian sheep: (1) North Danubian (Balkanian) or Turcana, (2) Macedonian, (3) Dinaric.

I. The North Balkanian clad of Valachian breeds has as the basis, the Romanian Turcana.

Turcana, the main sheep breed of Romania (44%, some 4,6 mil. ewes in 1986) has an island structure with many subbreeds not too isolated between them. Some subbreeds are more or less sedentary (Grey Turcana, Bistrita Turcana, Ciusca, Ratca, etc.). Other are transhumant (Sibiu Margine, Novaci-Vaideeni).

The sedentary subbreeds of Turcana is the starting point of:

- (1) Chushka (Tusca) breed of S Ucraina isolated perhaps for some 1-200 years from Romanian Tusca subbreed.
- (2) Valachian breed from Slovakia and Czechia, isloated for some 3-400 years from North Romanian Turcana subbreeds but having perhaps some transhumant Turcana blood. It was maybe an old transhumant road in that direction before 17 th century. Sumava breed is perhaps derived from Valachian and improved by crossing with Kent.
- (3) Old Polish Mountain breed was perhaps connected with Slovakian and Czech Valachian breed but it was improved by the importation of transhumant Turcana (Sibiu) and of Sebes valley sedentary Turcana (1911-1913, 1935-1937).
- (4) Hungarian Racka breed is related with Romanian Ratca, native in SV Romania (S Banat), In 1960, an import was made from this region.

The Romanian transhumance Turcana is the starting point of:

1. Voloshian breed of s Ucraina (Pyrnai) and S Russia
(Caucasus Transdon, Voronej, etc.):
2. Svisthov breed of N Bulgaria.

II. The Macedonian clad of Valachian breeds has perhaps some transhumant and many sedentary breeds. We have not satisfactory documentation to make a filetic classification of it.

The transhumance breeds seem to be:

(1) Vlahiko breed (Saracatsanico, Karagunico) from Greece;

(2) Karakachen from S Bulgaria, Macedonia named Kutsovlaski (Yugoslavia) the some with Saracatsanico (Greece) (is a name of Aromanian etnic group).

Connected with this transhumant breeds there are perhaps also many Greek breeds (Florina, Boutsika, Sfakia) and Yougoslavian (Montenegru and Serbian) breeds of Pramenka and also Albanian Recka, a local breed (Common Albanian) with the name similar with Romanian and Hungarian Ratca (Racka) but not being the same (not V - shaped twisted horns).

Two Albanian breed (1) Shkodra and (2) Bardhoka seem to have a longer reproductive isolation from the Valachian breeds (the milk and wool production/kg live weight higher).

III. The Dinar branch (clad) of Valachian sheeps is perhaps represented by the Licka Ovca, from Croatia and Vlasic from Bosnia, possible transhumant or former transhumant sheep and by other sedentary breed derived or concted with them

(Croatian Ruda Dubrovacka, Pasca, etc.). It looks like that in West Balkan zone there are many breeds and subbreeds not clear reproductive isolated, the same as in Romanian Turcana.

A filetic classification of Tsigaia (Prototsigaia) breeds

Tsigaia (Tsigai, Cigaja) is a native sheep breed of central and SE Romania (19%, some 1,9 mil. sheep in 1986): Tsigaia means in Romanian short, silken, soft, crimp wool (17 th century). It is perhaps a branch (clad) of so called Prototsigaia who has at least one more branch on the south and west Balkan meedium wool breeds.

I. Tsigaia breeds have the origin in:

(1) Romanian Tsigaia. It has an island structure, but there are small differences between subpopulation maybe with one exception - Teleorman Tsigaia, which is the same, perhaps derived, from Pleven Blackhead (Bulgaria). There were two transhumant centers (Sacele - SE Brasov and Covasna - in Carpathians bend) from wich are derived the following breeds.

(2) Russian Tsigaia (S Russia, S Ucraina) who have now some Romney blood and from wich was exported Tsigaia within the last 30 years.

(3) Yougoslavian (Voivodina) Cigaja with more or less Bergamo blood, (maybe Solcava) perhaps brought to Voivodina by Romanian transhumant shepherds from Istria.

(4) Pleven Blackhead (Bulgaria) a breed quite similar with Yougoslavian Cigaja; the explanation of its presence in North Bulgaria can be connected with transhumance too. Maybe it was named in 18 th century Tsigaia (Ryder, 1966).

(5) Hungarian Cigaja similar to Yougoslavian Tsigaia.

(6) Slovackian and Czech Tsigaia (Cigaja) derived from Romanian transhuman Tsigaia and recived some, Pleven Blackhead blood by an import from 1960.

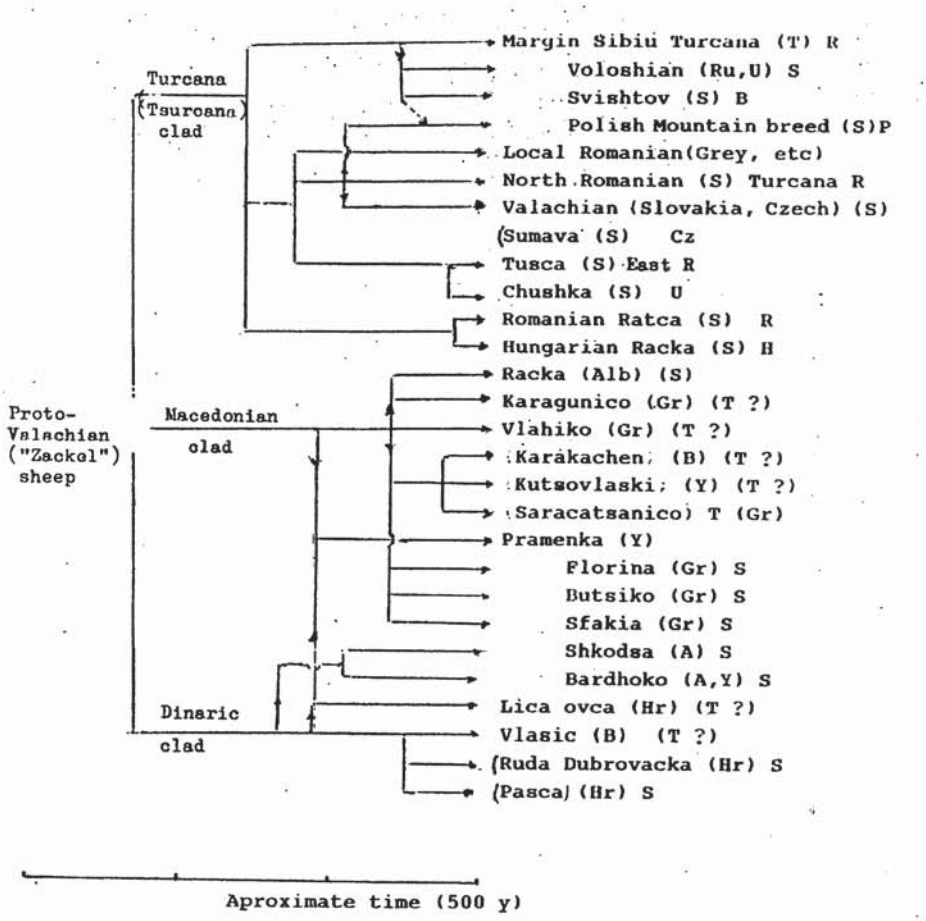
(7) Kivircik is a Turkish Tsigaia derived from Romanian Tsigaia by forces purchase before 1850 (some 1-200000 "Kivircik" sheep/year).

(8) Thraki (= ? Seres) is a Greek Kivircik.

II. Medium - wool breeds South and West Balkan mountains are related with Tsigaia. There are two branches:

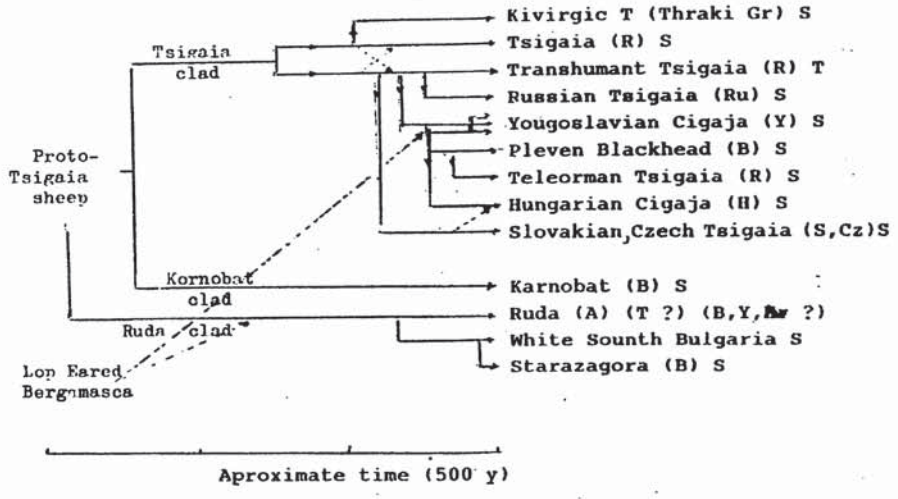
(1) Karnobat (SE Bulgaria). It is a breed very similar with black Tsigaia, but perhaps has a long reproductive isolation (maybe more than 1000 years). The gene for black color is dominant to white, inverse as in Tsigaia, but similar to the Valachian breed (Contescu, 1937, Constatinescu, 1939).

(2) Ruda breeds (Aruda in Aromanian, thje language of macedonian transhumant shepherds, means fine, delicate), there are in Albania and perhaps in other countries (Ruda Dubravacka, included in Valachian breeds); the white South Bulgarian breed and the Stara Zagora breed there are perhaps Ruda breed too, and they have resemblance in some aspects with Pleven Blackhead and Yougoslavian Tsigaia. It is posible to be in all Ruda breeds some Lop Eared blood too, and can be an another hypotesis. It is not relatied with Tsigaia being the sheep of other Roman colons.



S - sedentary T - transhumant

Fig. 2. - PROBABLE LINE OF EVOLUTION AND PHYLOGENETIC RELATIONSHIPS AMONG VALACHIAN (ZACKEL) BREEDS EXCLUSIVELY UPON HISTORICAL AND SOME COMPARATIVE MORPHO-PHYSIOLOGYCAL DATA



S - sedentary T - transhumant

Fig. 3. - PROBABLE LINE OF EVOLUTION AND PHYLOGENETIC RELATIONSHIPS AMONG TSIGAIA BREEDS BASED EXCLUSIVELY UPON HISTORICAL AND SOME COMPARATIVE MORPHO-PHYSIOLOGYCAL DATA

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Acknowledgements. I am gratefull to Prof. Dr. I. Bodo for his hospitality, for his helpful clarification of fenetic aspects of some breeds.