

Buteo spassovi sp. n. - a Late Miocene Buzzard (Accipitridae, Aves) from SW Bulgaria

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Боев, З. *Buteo spassovi* sp. n. - позднемиоценовый канюк (Accipitridae - Aves) из Юго-Западной Болгарии. Десятый фосильный вид рода *Buteo* (канюки), второй в Западной Палеарктике, описан по почти полностью сохраненной левой тибиотарсальной кости из окрестностей города Хаджидимово (бывший Благоевградский округ, Софийская область), датированной MN зона 11—12 (туролий - мзотический ярус). Обе находки в Западной Палеарктики (Grive-Saint-Alban в Юго-Восточной Франции и Хаджидимово в Юго-Западной Болгарии) указывают на южно-европейское распространение канюков на протяжении миоцена. Диагноз: Ископаемый позднемиоценовый канюк рода *Buteo*, отличающийся от современных евразийских *B. buteo*, *B. rufinus* и *B. lagopus* более острым проксимальным кантом *pons supratendineus*, более узкой *sulcus extensorius*, почти в два раза крупнее *tuberositas retinaculi m. fibularis*, более ясным выражением *linea intermuscularis* краниальной поверхности диафизиса, туповатым (с отсутствием острого окончания) дистальным концом *symphysis tibiofibularis*, более широким дистальным эпифизисом и более широкой *sulcus tendineus* латеральной поверхности дистального эпифизиса.

Abstract. The tenth fossil species of the genus *Buteo*, second of W Palearctic, is described by an almost complete left tibiotarsus from the town of Hadzhidimovo (former Blagoevgrad District, Sofia Region), dated MN zone 11-12. Both sites of *g. Buteo* in W Palearctic (Grive-Saint-Alban in SE France and Hadzhidimovo in SW Bulgaria) mark the S-European distribution of Buzzards (*g. Buteo*) during the Miocene. Diagnosis: A fossil Late Miocene species of *g. Buteo*, differing from modern *B. buteo*, *B. rufinus* and *B. lagopus* by the sharper proximal edge of *pons supratendineus*, narrower *sulcus extensorius*, almost twice larger *tuberositas retinaculi m. fibularis*, better developed *linea intermuscularis* on the cranial surface of diaphysis, blunter (without a tip) distal end of *symphysis tibio-fibularis*, and wider distal epiphysis, settled wider apart edges of *sulcus tendineus* on the lateral side of distal epiphysis.

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Key words: fossil Vertebrates, Tertiary birds, Miocene avifauna, SW Bulgaria, Turolian.

Introduction

The genus *Buteo* Lacepede, 1799 numbers 28 species of the recent avifauna, most of them (18) of New World distribution (Thiollay, 1994). Populations of the species spread in the Holarctic Region are resident or migratory. Only 3 species (*B. buteo* Linnaeus, 1758, *B. rufinus* Cretzschmar, 1827 and *B. lagopus* Pontoppidan, 1763) inhabit Western Palearctic (Cramp, 1980).

Fossil records of genus *Buteo*

Brodkorb (1964) lists 8 fossil species of this genus: *Buteo grangeri* Wetmore & Case, 1934 of Middle Oligocene of South Dakota, *B. fluviaticus* A. H. Miller & Sybley, 1942 of Middle Oligocene of Colorado, *B. antecursor* Wetmore, 1933 of Upper Oligocene of Wyoming, and five species from Nebraska: *B. ales* (Wetmore, 1926) of Lower Miocene, *B. typhoius* Wetmore, 1923 of Upper Mioce-

re, *B. contortus* (Wetmore, 1923) of Upper Miocene, *B. dananus* (Marsh, 1871) of Lower Pliocene, and *B. conterminus* (Wetmore, 1923) of Lower Pliocene. Later, Ballmann (1969) described *B. pusillus* from the Middle Miocene (MN zone 7-8) of S France, the only fossil species, originated from the Palearctic Region. Mourer-Chauvire' (1975) described in addition, a Middle Pliocene subspecies, *B. rufinus jansoni* from S France. No other fossil taxa are described in g. *Buteo* (Olson, 1985; 1993). Alcover (1989) reports on *Buteo* remains from the Late Pliocene (MN zone 17) of Ibiza island (Spain) without species determination.

Taxonomic description of the species

Buteo spassovi sp. n. Boev

Holotype. An almost complete tibiotarsus sin. (Fig. 1). Collections of the Fossil and Recent Birds Department of the National Museum of Natural History, Bulgarian Academy of Sciences, No NMNHS - 10 190. Collected in 1990s by Dimitar Kovachev.

Paratypes. No additional material was collected and no paratypes were specified.

Locality. 2 km from the Hadzhidimovo village near the town of Gotse Delchev (Sofia Region /former Blagoevgrad District/, UTM code GM 30), on the right bank of the Mesta river (SW Bulgaria). Ca. 500 m a.s.l. (Fig. 2).

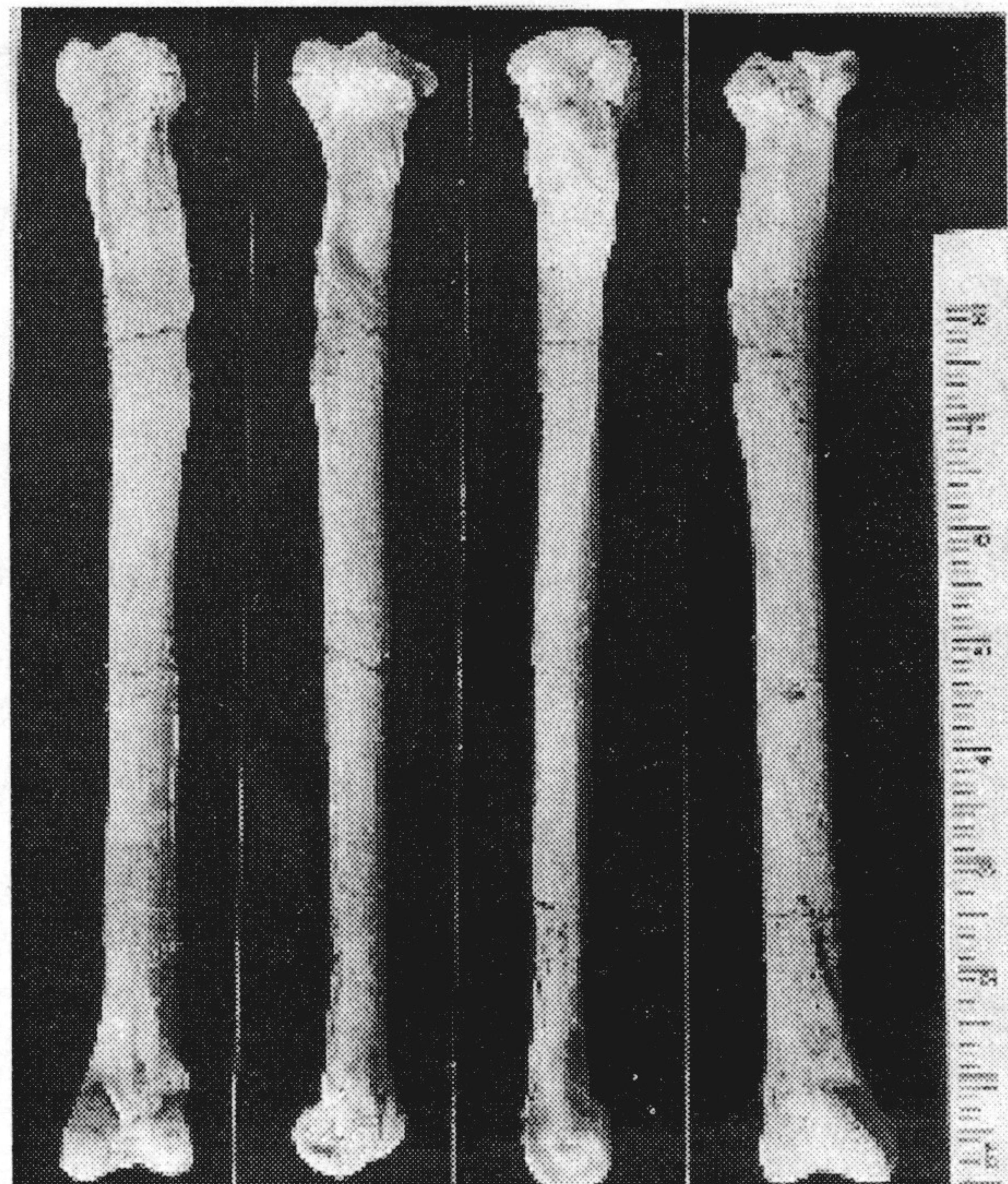


Fig. 1. *Buteo spassovi* sp. n. - tibiotarsus sin., No NMNHS 10 190 (holotype), left to right: cranial view, medial view, lateral view, and caudal view (Photographs: Boris Andreev)

Stratigraphic position. Unconsolidated, unstratified sediments accumulated in yellowish sands and clay sands.

Chronostratigraphy. Upper Miocene (Turolian - Meotian, lower part), MN zone 11-12 according to

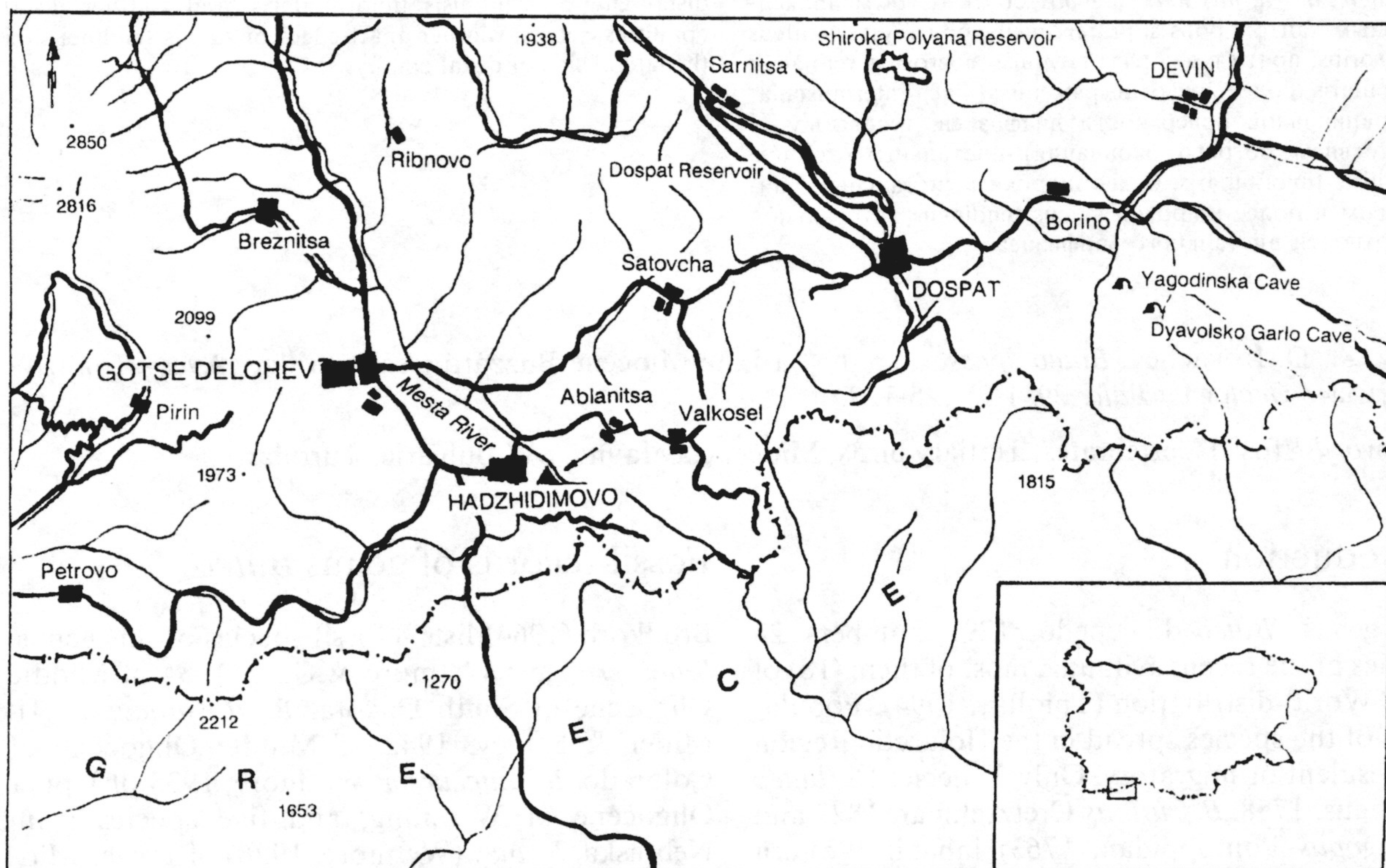


Fig. 2. Location of the Late Miocene site of vertebrate fauna near the town of Hadzhidimovo (Drawing: Vera Hristova)

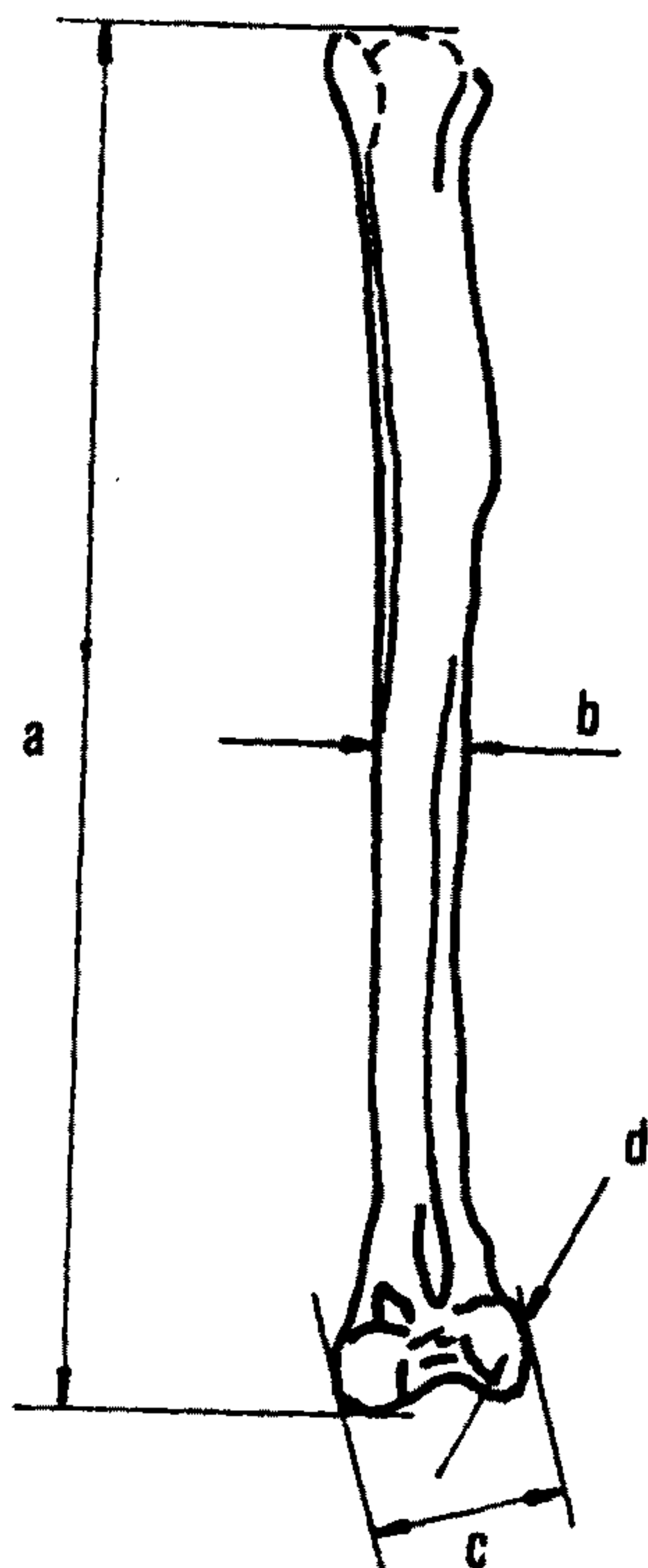


Fig. 3. The manner of measurements of tibiotarsus in *Buteo*

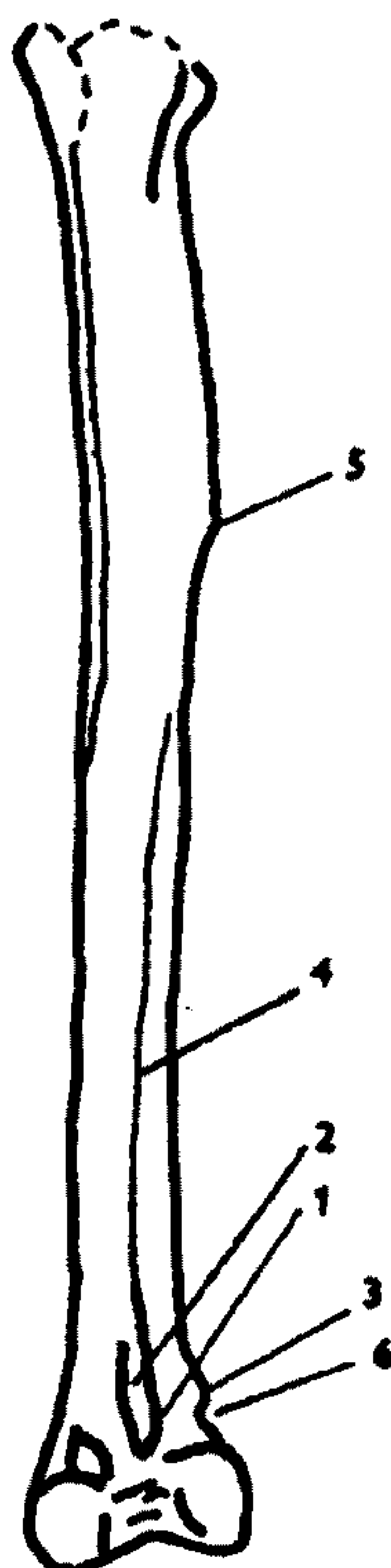


Fig. 4. Some morphological characters of tibiotarsus of *Buteo spassovi* sp. n.

the stratigraphical system of Mein (1990); about 7 Ma. The sediments studied from the site belong to the Nevrokop Formation (Vatsev, 1980; Nikolov, 1985). Associated mammalian fauna: *Machairodus giganteus*, *Metailurus* aff. *major*, *Paramachairodus orientalis*, *Palaeoryx* sp., *Prostrepsiceros* sp., *Trogoceros* cf. *amalthaus*, *Gazella* (*Vetagazella*) sp., *Palaeorheas?* *lindermayeri*, *Hipparion* sp. 1, *Hipparion* sp. 2, Rhinocerotidae indet. sp. 1, Rhinocerotidae indet. sp. 2, *Halicotherium* indet., ?*Helladotherium* sp., Hyenidae indet. (N. Spassov, unpubl. data).

Etymology. The name "spassovi" is given in honour of the Bulgarian paleontologist Dr Nikolay Spassov (National Museum of Natural History, Sofia), who contributed in much for the studying of the Bulgarian Neogene and Quaternary macro-mammalian fauna.

Measurements. See table 1, fig. 3.

Description. The find No 10 190, partly with exception of the bone crests of proximal epiphysis, is complete. All lineae intermusculares are clearly preserved. The diaphysis was broken at 8 places along its length, but there are no missing parts. The find belongs to an adult specimen, fully completed its mature development.

Comparison. In comparison with *B. buteo* the find No 10 190 has (fig. 4): sharper proximal edge of pons supratendineus (1), narrower sulcus extensorius (2), almost twice larger tuberositas retinaculi m. fibularis (3), better developed linea intermuscularis on the cranial surface of diaphysis (4), blunter (with no tip) distal end of symphysis tibio-fibularis (5), wider distal epiphysis, settled wider apart edges of sulcus tendineus (6) on the lateral side of distal epiphysis.

In comparison with *B. rufinus* No 10 190 (the whole bone) has smaller size and shorter diaphysis,

Table 1
Measurements of tibiotarsus in fossil and recent Accipitridae (ref. to Fig. 3)

Species	a	b	c	d
Fossil				
<i>Buteo spassovi</i> sp. n. NMNHS 10 190	105.5	6.5	12.7	8.7
Recent				
<i>Buteo buteo</i> NMNHS 26/ 1989	98.1	5.8	11.3	7.7
<i>Buteo buteo</i> NMNHS 30/ 1991	116	5.8	11.7	8.0
<i>Buteo buteo</i> NMNHS 32/ 1992	116.3	6.6	13.2	8.7
<i>Buteo rufinus</i> NMNHS 1/ 1989	116.9	7.2	13.9	9.6
<i>Buteo rufinus</i> NMNHS 3/ 1989	130.6	7.2	13.7	10.4
<i>Buteo lagopus</i> NMNHS 2/ 1987	100.8	6.0	12.4	8.2
<i>Buteo lagopus</i> NMNHS 3/ 1987	ca. 98.7	6.1	11.6	7.8
<i>Accipiter gentilis</i> NMNHS 16/ 1992	119.3	7.8	9.0	9.7

slightly inclined medially in its proximal third. It differs analogically by the presence of characters (1-6) also.

In comparison with *B. lagopus* and *Pernis apivorus* the find from Hadzhidimovo has longer diaphysis and shows the differences (1-6) mentioned above.

The specimen No 10 190 resembles *Milvus migrans* by feature (3), but remaining features (1-2; 4-6) are different also. In comparison with *Accipiter gentilis* the find from Bulgaria differs the same way, but it also has thinner and medially inclined diaphysis in the proximal end.

As Ballmann (1969) writes in the diagnosis, *B. pusillus* was a buzzard of "... a taille assez petite, mai plus grand que *Buteo magnirostris* ..." (p. 173). External dimensions of *B. magnirostris* are about 68 % of the dimensions of *B. buteo* (Thiollay, 1994). As seen from Tabl. 1, *B. spassovi* sp. n. was larger than recent *B. buteo*. This exclude *B. pusillus* of our discussion. In spite of its Miocene Age, that species may be excluded also due the lacking of analogous bone finds. It was described by a right carpometacarpus.

All other species, except *B. dananus*, were described by different skeletal elements, which does not allow to compare our find. *B. dananus* is

known by a distal part of left tibiotarsus. Chronostratigraphically ("Lower Pliocene") this species is close to the find of *B. spassovi* sp. n. and originated of C Nort America (Nebraska). Because of the lack of analogous bones, all other fossil species in the genus cannot be compared. The find No 10 190 differs from *B. dananus* by the more concave medial and lateral trochanter surfaces of distal epiphyses of tibiotarsus, smaller size and the relatively wider pons supratendineus. As seen from the fig. 13 of Plate II of the work of Shufeldt (1915), the contour of the condylus lateralis in cranial view is more angular and it is slightly thicker than in *B. spassovi* sp. n.

B. rufinus jansoni Mourer-Chauvire', 1975 differs from modern specimens by the smaller size of the tarsometatarsus. This subspecies may be excluded from our considerations of taxonomical identity because of the stratigraphical difference too.

Diagnosis. A fossil Late Miocene species of g. *Buteo*, differing from modern *B. buteo*, *B. rufinus* and *B. lagopus* by the sharper proximal edge of pons supratendineus, narrower sulcus extensorius, almost twice larger tuberositas retinaculi m. fibularis, better developed linea intermuscularis on the cranial surface of diaphysis, blunter (without a

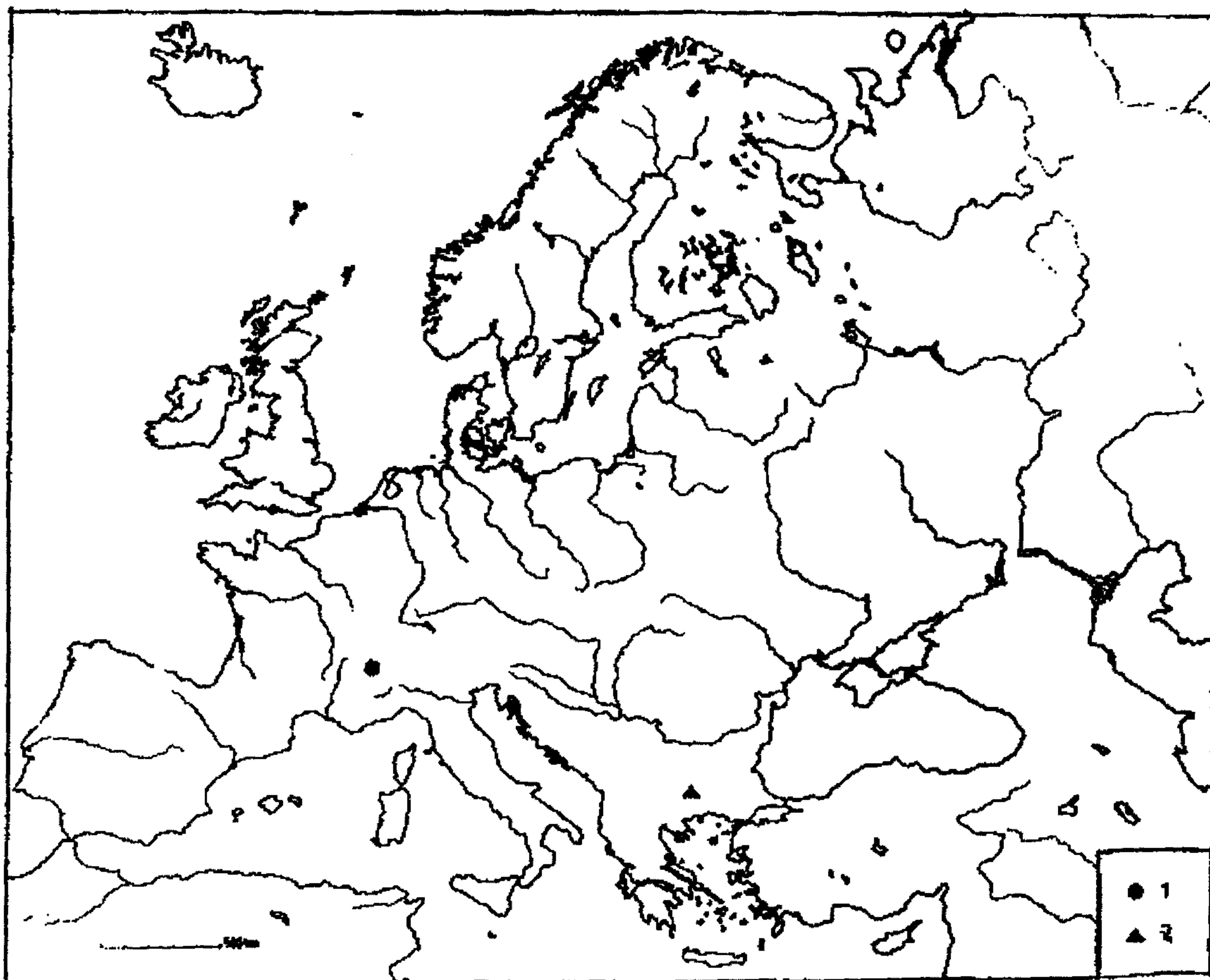


Fig. 5. The geographical distribution of g. *Buteo* in Europe in the Miocene: the site of Grive-Saint-Alban (Isere) in SE France (1); the site of Hadzhidimovo (Blagoevgrad District) in SW Bulgaria (2)

tip) distal end of symphysis tibio-fibularis, and wider distal epiphysis, settled wider apart edges of sulcus tendineus on the lateral side of distal epiphysis.

Collections acronyms. NMNHS - National Museum of Natural History - Sofia.

Comparative material examined. The find from Hadzhidimovo was compared with skeletons of the following species: Collections of the NMNHS: *Buteo buteo* - 26/1989; 30/1991; 32/1992; *Buteo rufinus* - 1/1989; 3/1989; *Buteo lagopus* - 2/1987; 3/1987; *Accipiter gentilis* - 16/1992.

Discussion

Judging by the higher number of recent species, spread both in S and N America, and bigger number of fossil taxa, described there, we may conclude that the g. *Buteo* originated in Western Hemisphere, possibly in S America, where most of the species still occur. As seen from the provided review, the finds of fossil *Buteo* species in the Old World are very rare. The site of Hadzhidimovo provides the second find of Europe and Western Palearctic respectively. At the same time, it belongs to the second European fossil species of g. *Buteo*. Now, the two Miocene sites (Grive-Saint-Alban and Hadzhidimovo) marks the S-European distribution of g. *Buteo* throughout the Miocene of Europe (fig. 5).

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