Osteological guide of songbirds from Central Europe

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Abstract The author provides an osteological guide to songbirds, based on 11 skeletal parts of 51 genera, at the genus level for ornithologists studying owl pellets, paleontologists and archaeozoologists. The mandible, the coracoid bone, the scapula, the humerus, the ulna, the carpometacarp, the first phalanx bone of the second finger, the femur, the tibiotars, the tarsometatars and the claw bone are presented. The morphological characteristics and method of measurement of the examined skeletal parts and the photographs of the appropriate bones are illustrated on 52 plates and 17 figures. The measurement data are also provided in 11 size tables. For every discussed bone, 3–6 characteristics are chosen, and their codes consist of 3–6 letters. In case of overlaps, dimensions are the determining factors, and for the humerus and the ulna, the ensemble of the two bone end pairs can be used.

Keywords: Central-Europe, guide, osteology, Paleornithology, archaeozoology, Passerines

Összefoglalás A szerző 51 énekesmadár genus 11 vázrészének morfológiai jellemzőin alapuló csonthatározót állított össze a bagolyköpeteket vizsgáló ornitológusoknak, paleontológusoknak, archaeozoológusoknak ajánlva. A dolgozatban az alsó állkapocs (*mandibula*), a hollócsőrcsont (*coracoideum*), a lapocka (*scapula*), a felkarcsont (*humerus*) és a singcsont (*ulna*), a kézközépcsont (*carpometacarpus*), a kézujjperc (*phalanx proximalis digiti majoris*), a combcsont (*femur*), a lábszárcsont (*tibiotarsus*), a csüd (*tarsometatarsus*) és a karomcsont (*phalanx ungularis*) jellemzői találhatók.

A vizsgált vázrészek morfológiai jellegei, mérési módja és a csontok fényképe 52 táblaképen és 17 ábrán található. Tájékoztatósi célból a mérési adatokat is közöljük 11 táblázatban. A határozó a kiválasztott morfológiai jelek kódolásán alapszik. Minden tárgyalt csonton 3–6 jelleg került kiválasztásra, és ennek megfelelően a kódok 3–6 betűből állnak. Átfedések esetén a méretek az irányadóak, illetve a felkarcsontnál és a singcsontnál a két-két csontvég együttese használható.

Kulcsszavak: Közép-Európa, határozó, csonttani, paleornitológia, archaeozoológia, énekesmadarak

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Introduction

Despite the numerous songbird skeletal parts remaining in owl pellets, rocks from the Neogene period and at archaeological sites alike, the identification of these is still lagging behind all across Europe due to the lack of an ample comparative skeleton collection, and a relatively easy-to-use guide-book.

The current work wishes to aid this work by providing codes as well as images and measurement data.

The preparation of the guide was limited to the material of the recent osteological collection available in the Paleontological and Geological Department of the Hungarian Natural History Museum. There are only 48 (or 46–47) because not all genera had all the skeleton parts, or they were not in ample

condition to photograph, hence the lower number of shown parts than the number of processed genera (51).

Only those skeletal parts are presented which have remained complete and which carry morphological characteristics that are characteristic at the genus level.

On the skull, only the tip of the mandibula, the proximal end of the coracoid and the scapula from the pectoral girdle are described. On the upper limb, the humerus, the ulna, the metacarpus bones (*carpometacarpus*) and the first phalanx bone of the second finger (*phalanx proximalis digiti majoris*) completely, whereas on the lower limb, the femur, the tibiotarsus, the distal end of the tarsometatarsus and the claw (*phalanx ungularis*) are described. The point is that since both ends (*epiphysis*) of either a humerus or an ulna are enough for a definition, and often the ends surface separately or partially because the bone itself is broken, they both can be traced as parts of the same bone and had been coded as such.

In the case of other long bones, only the end part, which had been easier to define, was coded.

Other parts of the excessively fragile skull, vertebrae, ribs, the sternum, the pelvis (*synsacrum*), the clavícula, the radius, a few carpi (*carpale*) and the fibula (*peroneum*) are not presented here.

Since the largest family of the order of songbirds (Passeriformes), the Corvidae, is relatively well-known (Kessler & Moldvai 1993, Tomek & Bochenki 2000), genera belonging to here are not discussed. However, the Western Jackdaw (*Corvus monedula*) is used to illustrate anatomical and dimensional characteristics.

The distinctive feature of the guide lies in the method of coding. Each discussed skeletal part of each genus receives a 3-6-letter

code, which can be used to identify the appropriate genus from the bone. The typical code types are presented for skeletal parts via tables and figures.

The guide is supplemented by 52 tables and 17 figures, with 4-4 tables for each discussed skeletal part. Eight of these are graphical illustrations (in case of the mandibula and scapula), while other bones are presented by original photographs. The preparatory state of the bones in the collection influenced the colour and sharpness of the photographs. The degreased skeletal parts appear more bright and sharp, while those remaining greased are less sharp and are darker. Colour and sharpness were modified by transforming the original colour image to greyscale.

Since more than half of the discussed 51 genera represent several species which primarily differ in size or color of their feathers, we also attach tables of dimensions for each skeletal part for information. The dimensions are taken from one specimen. In case of genera containing several species, the lower and upper limits of all the species are given.

From practical considerations we used the taxonomy after Cramp (1998). (Except of *Luscinola*, which was separated from *Acrocephalus*.)

Finally, it was not possible to show bones from the same sides of each skeletal part on the pictures.

Method

For every discussed skeletal part, the anatomical terminology (Baumel *et al.* 1979) and method of measurement (von den Driesch 1976, Gál 2002, Kessler 2013) of the bone in question is given, illustrated by the

appropriate bone of the Western Jackdaw. Arrows indicate the coded characteristics.

For each anatomical character, a number of different types are differentiated, which received capitalized codes. We attempted to keep the number of codes at a minimum, since we had to take into account the individual differences and, in the case of genera featuring several species, the differences between them. This way we could make sure that even the more or less similar anatomical features can be classified easier and we could avoid subjective judgement.

Based on the characteristics used, we constructed a code consisting of 3-6 letters. The majority of these is typical for a single genera, but in a few cases, for more than one. In such cases, either the difference in size will define where they belong, or for similar sizes, the tables and figures provide guidance. (The tables with the bone sizes include genera with a single species, and genera with several species. In the first case, only a single size of the species is given. In the latter case, the limits of the smallest species and the biggest species from the genus are given.)

During genus identification, we create the code for the specific bone (or end of bone) and match it with the appropriate code in this guide. The images of genera with similar (but not identical) codes can give further help.

It is worth noting that the fewer of the characteristics are coded, the higher the chance of overlapping. Regarding overlapping of the humerus and ulna, we have to take into account the codes of both of the epiphyses.

Since for a definition of guaranteed accuracy the recent comparative osteological collection is absolutely required, this current guide can only serve information purposes.

Anatomical terminology (after: Milne-Edwards 1867-68, Fürbringer 1888, Lambrecht 1933, Ballmann 1966, Mourer-Chauviré 1975, Baumel *et al.* 1979, Gilbert *et al.* 1981, Cheneval 1983, Jánossy 1985, Moreno 1985, 1986, 1987, Cuisin 1989, Ujhelyi 1992, Kessler & Moldvai 1993, Solti 1996, Tomek & Bochenski 2000, Kessler 2013a). Plate with morphological characters (*Figure 1*).

1. *mandibula*:

- a. *rostrum mandibulae*;
- b. the immersed part of the *rostrum*;
- c. *ramus mandibulae*;

2. *coracoideum*:

- a. *acrocoracoideum*;
- b. *tuberculum brachiale* (*processus acrocoracoideus*);
- c. *sulcus musculi supracoracoidei*;
- d. *processus procoracoideus*;
- e. *processus glenoidalis coracoidei*;

3. *scapula*:

- a. dorsal branch of the *acromion*;
- b. lateral branch of the *acromion*;
- c. the pit between the branches of the *acromion*;
- d. *acromion*;
- e. *processus glenoidalis scapulae*;

4. *humerus* (proximal epiphysis):

- a. *tuberculum ventrale*;
- b. *crista bicipitalis*;
- c. the edge between *crista bicipitalis* and *corpus humeri*;
- d. *fossa pneumotricipitalis*;
- e. *caput humeri*;
- f. *crista deltopectoralis*;

5. *humerus* (distal epiphysis):

- a. *tuberculum supracondylare ventrale*;

Corvus monedula L. 1758 skeleton

Figure 1 Morphological characters *Corvus monedula* L. 1758 bones;

(A – mandibula; B – coracoideum; C – scapula; D – humerus prox.; E – humerus dist.; F – ulna prox.; G – ulna dist.; H – carpometacarpus; I – phalanx prox. dig. maj.; J – femur dist.; K – tibiotarsus dist.; L – tarsometatarsus dist.; M – phalanx ungularis)

1. ábra Morfológiai jellegek *Corvus monedula* L. 1758 csontokon

(A – alsó állkapocs; B – hollócsőrscsont; C – lapocka; D – felkarcsont proximális epifízis; E – felkarcsont disztális epifízis; F – singcsont prox. epifízis; G – singcsont diszt. epifízis; H – kézközépcsont; I – szárny ujjperc; J – combcsont diszt. epifízis; K – lábszárcsont diszt. epifízis; L – csüd diszt. epifízis; M – karomcsont)

- b. *processus flexorius*;
- c. *processus supracondylaris dorsalis*;
- d. *incisura intercondylaris*;

6. ulna (proximal epiphysis):

- a. *olecranon*;
- b. *cotyla dorsalis*;
- c. *tuberculum ligamentum collateralis ventralis*;

7. ulna (distal epiphysis):

- a. *condylus dorsalis*;
- b. *sulcus intercondylaris*;
- c. *condylus ventralis*;
- d. *tuberculum carpale*;

8. carpometacarpus:

- a. *trochlea carpalis*;
- b. *processus extensorius*;
- c. *processus alularis*;
- d. *fovea subalularis*;
- e. *protuberantia metacarpale majus*;
- f. *facies articularis digitale minor*;

9. phalanx proximalis digiti majoris:

- a. *margo proximalis*;
- b. *tuberculum ventralis*;
- c. *tuberculum dorsalis*;
- d. *margo dorsalis*;
- e. *margo distalis*;

10. femur (distal epiphysis):

- a. *condylus medialis*;
- b. *sulcus intercondylaris*;
- c. *condylus lateralis*;
- d. *epicondylus medialis*;
- e. *epicondylus lateralis*;

11. tibiotarsus (distal epiphysis):

- a. *epicondylus lateralis*;
- b. *epicondylus medialis*;
- c. *incisura intercondylaris*;
- d. *tuberositas retinaculi*;

12. tarsometatarsus (distal epiphysis):

- a. *margo medialis*;
- b. *trochlea metatarsi II.*;
- c. *trochlea metatarsi III.*;
- d. *trochlea metatarsi IV.*;
- e. *incisura intertrochlearis medialis*;
- f. *incisura intertrochlearis lateralis*;

13. phalanx ungularis:

- a. *tuberculum extensorium*;
- b. *cotyla articularis*
- c. *tuberculum flexorium*
- d. the curvature of the *margo plantaris*
- e. *apex phalangis*;

Measurement manner: (after: von den Driesch 1976, Gál 2002, Kessler 2013b)

Plate with measurement manner (Figure 2):

TL – total length (a)

PL – partial length: *mandibula* – length of the *rostrum* (b), *scapula* – length of the proximal end (a)

Bp – breadth of the proximal end (b)

Bc – breadth of the corpus (c); *mandibula* – breadth of the *rostrum* (a)

Bd – breadth of the distal end (d)

PB – partial breadth: *mandibula* – breadth of the *ramus mandibulae* (c)

Abbreviations:

No. sp – measured number of species

LTB – *coracoideum* – length of the *tuberculum brachialis* (b)

The codification

1. Mandibula (Figure 4, Plate 1–4, Table 1)

1.1. the pointed end of the *rostrum mandibulae*:

- A. short and medium width: *Aegithalos*;
Bombycilla;

- B. short and width: *Carduelis*; *Coccothraustes*; *Chloris*; *Delichon*; *Emberiza*; *Hirundo*; *Loxia*; *Passer*; *Pinicola*; *Plectrophenax*; *Pyrrhula*; *Riparia*; *Serinus*;
- C. medium long and width: *Fringilla*; *Lanius*; *Muscicapa*; *Oriolus*;
- D. medium long and medium width: *Acrocephalus*; *Anthus*; *Calandrella*; *Cinclus*; *Eremophila*; *Erithacus*; *Hippolais*; *Lullula*; *Luscinia*; *Oenanthe*; *Parus*; *Phoenicurus*; *Phylloscopus*; *Prunella*; *Remiz*; *Saxicola*; *Sitta*; *Sturnus*; *Sylvia*; *Turdus*;
- E. long and narrow: *Certhia*; *Troglodytes*;
- F. long and medium width: *Alauda*; *Cettia*; *Galerida*; *Locustella*; *Melanocorypha*; *Monticola*; *Motacilla*;
- Cinclus*; *Emberiza*; *Galerida*; *Hippolais*; *Locustella*; *Lullula*; *Luscinia*; *Monticola*; *Oenanthe*; *Parus*; *Phylloscopus*; *Prunella*; *Saxicola*; *Sitta*; *Sturnus*; *Sylvia*; *Troglodytes*;
- B. slightly protruding above: *Aegithalos*; *Anthus*; *Bombycilla*; *Eremophila*; *Motacilla*, *Plectrophenax*; *Remiz*;
- C. wide or medium protruding above: *Delichon*; *Erithacus*; *Lanius*; *Muscicapa*; *Oriolus*; *Phoenicurus*; *Plectrophenax*;
- D. strongly protruding above: *Hirundo*; *Riparia*; *Melanocorypha*;
- E. slightly protruding below: *Carduelis*; *Fringilla*; *Passer*; *Serinus*;
- F. strongly protruding below: *Chloris*; *Coccothraustes*; *Loxia*; *Pinicola*; *Pyrrhula*;

1.2. the immersed part of the rostrum:

- A. semicircular: *Aegithalos*; *Bombycilla*; *Carduelis*; *Emberiza*; *Hippolais*; *Muscicapa*; *Oenanthe*; *Sylvia*;
- B. semi-circle in the middle with small tip: *Anthus*; *Delichon*; *Monticola*; *Motacilla*; *Parus*;
- C. ovoid: *Alauda*; *Calandrella*; *Cinclus*; *Eremophila*; *Galerida*; *Hirundo*; *Lanius*; *Melanocorypha*;
- D. ovoid with small tip: *Locustella*; *Lullula*; *Riparia*; *Troglodytes*;
- E. pointed: *Acrocephalus*; *Certhia*; *Sitta*;
- F. semi-circle with small recess: *Erithacus*; *Oriolus*; *Prunella*;
- G. shouldered recess: *Cettia*; *Coccothraustes*; *Loxia*; *Phoenicurus*; *Phylloscopus*; *Saxicola*; *Sturnus*; *Turdus*;
- H. wide semi-circle: *Luscinia*; *Muscicapa*; *Fringilla*; *Plectrophenax*; *Remiz*;
- I. wide semi-circle with small tip: *Chloris*; *Passer*; *Pinicola*; *Pyrrhula*; *Serinus*;

Alaudidae: *Alauda* FCA; *Calandrella* DCA; *Eremophila* DCB; *Galerida* FCA; *Lullula* DDA; *Melanocorypha* DED;

Hirundinidae: *Delichon* BBC; *Hirundo* BCD; *Riparia* BDD;

Paridae: *Aegithalos* AAB; *Parus* DBA; *Remiz* DHB;

Certhiidae: *Certhia* EEA;

Sittidae: *Sitta* DEA;

Muscicapidae: *Erithacus* DFC; *Luscinia* DHA; *Monticola* FBA; *Muscicapa* CAC; *Oenanthe* DAA; *Phoenicurus* DGC; *Saxicola* DGA;

Turdidae: *Turdus* DGA;

Oriolidae: *Oriolus* CFC;

Sylviidae: *Acrocephalus* DEA; *Cettia* FGA; *Hippolais* DAA; *Locustella* FDA; *Phylloscopus* CGA; *Sylvia* CAA;

Motacillidae: *Anthus* DBB; *Motacilla* FBB;

Bombycillidae: *Bombycilla* AAB;

Troglodytidae: *Troglodytes* EDA;

Cinclidae: *Cinclus* DCA;

Prunellidae: *Prunella* DFA;

Laniidae: *Lanius* CCC;

1.3. the form of the ramus mandibulae:

- A. straight: *Acrocephalus*; *Alauda*; *Calandrella*; *Certhia*; *Cettia*; *Chloris*;

Sturnidae: *Sturnus* DGA;

Passeridae: *Passer* BIE;

Fringillidae: *Carduelis* BAE; *Chloris* BIF; *Coccothraustes* BGF; *Fringilla* CHE; *Loxia* BGF; *Pinicola* BIF; *Pyrrhula* BIF; *Serinus* BIE;

Emberizidae: *Emberiza* BAA; *Plectrophenax* BHB;

AAB: *Aegithalos*; *Bombycilla*;

BAA: *Emberiza*;

BAE: *Carduelis*;

BBC: *Delichon*;

BCD: *Hirundo*;

BDD: *Riparia*;

BGF: *Coccothraustes*; *Loxia*;

BHB: *Plectrophenax*;

BIE: *Passer*; *Serinus*;

BIF: *Chloris*; *Pinicola*; *Pyrrhula*;

CAC: *Muscicapa*;

CCC: *Lanius*;

CFC: *Oriolus*;

CHE: *Fringilla*;

DAA: *Hippolais*; *Oenanthe*; *Sylvia*;

DBA: *Parus*;

DBB: *Anthus*;

DCA: *Calandrella*; *Cinclus*;

DCB: *Eremophila*;

DDA: *Lullula*;

DEA: *Acrocephalus*; *Sitta*;

DED: *Melanocorypha*;

DFA: *Prunella*;

DFC: *Erithacus*;

DGA: *Phylloscopus*; *Saxicola*; *Sturnus*; *Turdus*;

DGC: *Phoenicurus*;

DHA: *Luscinia*;

DHB: *Remiz*;

EDA: *Troglodytes*;

EEA: *Certhia*;

FBA: *Monticola*;

FBF: *Motacilla*;

FCA: *Alauda*; *Galerida*;

FDA: *Locustella*;

FGA: *Cettia*;

2. *Coracoideum* (Figure 5, Plate 5–8, Table 2)

2.1. the *processus acrocoracoideus* (*tuberculum brachiale*):

- A. long and blunt: *Aegithalos*; *Certhia*; *Emberiza*; *Hippolais*; *Luscinia*; *Luscinia*; *Muscicapa*; *Phoenicurus*; *Phylloscopus*; *Regulus*; *Saxicola*; *Sitta*;
- B. long and pointed: *Acrocephalus*; *Cettia*; *Erithacus*; *Oenanthe*; *Oriolus*; *Sylvia*;
- C. short and blunt: *Alauda*; *Anthus*; *Bombycilla*; *Calandrella*; *Carduelis*; *Chloris*; *Coccothraustes*; *Delichon*; *Galerida*; *Lanius*; *Locustella*; *Loxia*; *Lullula*; *Melanocorypha*; *Monticola*; *Motacilla*; *Parus*; *Passer*; *Pinicola*; *Pyrrhula*; *Remiz*; *Riparia*; *Sturnus*; *Troglodytes*;
- D. short and pointed: *Fringilla*; *Hirundo*; *Panurus*; *Plectrophenax*; *Prunella*; *Turdus*;

2.2. the *acrocoracoideum*:

- A. symmetrical: *Aegithalos*; *Alauda*; *Anthus*; *Carduelis*; *Chloris*; *Coccothraustes*; *Emberiza*; *Erithacus*; *Galerida*; *Loxia*; *Luscinia*; *Lullula*; *Melanocorypha*; *Monticola*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Panurus*; *Pinicola*; *Phylloscopus*; *Plectrophenax*; *Pyrrhula*; *Remiz*; *Riparia*; *Sitta*; *Sturnus*;
- B. assymmetric: *Acrocephalus*; *Bombycilla*; *Calandrella*; *Certhia*; *Cettia*; *Delichon*; *Fringilla*; *Hippolais*; *Hirundo*; *Lanius*; *Locustella*; *Luscinia*; *Oriolus*; *Parus*; *Passer*; *Phoenicurus*; *Prunella*; *Regulus*; *Saxicola*; *Sylvia*; *Troglodytes*; *Turdus*;

2.3. the sulcus musculi supracoracoidei:

- A. symmetrically semicircular: *Acrocephalus*; *Certhia*; *Erithacus*; *Lanius*; *Melanocorypha*; *Monticola*; *Muscicapa*; *Oenanthe*; *Pyrrhula*; *Turdus*;
- B. asymmetrically semicircular: *Aegithalos*; *Bombycilla*; *Carduelis*; *Cettia*; *Chloris*; *Coccothraustes*; *Delichon*; *Galerida*; *Hippolais*; *Hirundo*; *Luscinia*; *Luscinia*; *Oriolus*; *Panurus*; *Parus*; *Phoenicurus*; *Phylloscopus*; *Regulus*; *Remiz*; *Riparia*; *Saxicola*; *Sitta*; *Sturnus*; *Sylvia*;
- C. flattened: *Alauda*; *Anthus*; *Calandrella*; *Emberiza*; *Fringilla*; *Locustella*; *Loxia*; *Lullula*; *Motacilla*; *Passer*; *Pinicola*; *Plectrophenax*; *Prunella*; *Troglodytes*;

2.4. the processus procoracoideus:

- A. missing: *Bombycilla*; *Cettia*; *Delichon*; *Galerida*; *Hippolais*; *Hirundo*; *Luscinia*; *Luscinia*; *Motacilla*; *Panurus*; *Parus*; *Phylloscopus*; *Remiz*; *Riparia*;
- B. slightly overhanging: *Acrocephalus*; *Aegithalos*; *Alauda*; *Carduelis*; *Chloris*; *Lanius*; *Locustella*; *Melanocorypha*; *Passer*; *Phoenicurus*; *Prunella*; *Regulus*; *Sitta*; *Sylvia*;
- C. strongly protruding: *Anthus*; *Calandrella*; *Certhia*; *Coccothraustes*; *Emberiza*; *Erithacus*; *Fringilla*; *Loxia*; *Lullula*; *Monticola*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Pinicola*; *Plectrophenax*; *Pyrrhula*; *Saxicola*; *Sturnus*; *Troglodytes*; *Turdus*;

Alaudidae: *Alauda* CACB; *Calandrella* CBCC; *Galerida* CABA; *Lullula* CACC; *Melanocorypha* CAAB;

Hirundinidae: *Delichon* CBBA; *Hirundo* DBBA; *Riparia* CABA;

Paridae: *Aegithalos* AABB; *Panurus* DABA; *Parus* CBBA; *Remiz* CABA;

Certhiidae: *Certhia* ABAC;

Sittidae: *Sitta* AAB;

Muscicapidae: *Erithacus* BAAC; *Luscinia* AABA; *Monticola* CAAC; *Muscicapa* AAAC; *Oenanthe* BAAC; *Phoenicurus* ABBC; *Saxicola* ABBC;

Turdidae: *Turdus* DBAC;

Oriolidae: *Oriolus* BBBC;

Sylviidae: *Acrocephalus* BBAB; *Cettia* BBBA; *Hippolais* ABBA; *Locustella* CBCB; *Luscinia* ABBA; *Phylloscopus* AABA; *Regulus* ABBC; *Sylvia* BBBB;

Motacillidae: *Anthus* CACC; *Motacilla* CACA;

Bombycillidae: *Bombycilla* CBBA;

Troglodytidae: *Troglodytes* CBCC;

Prunellidae: *Prunella* DBCB;

Laniidae: *Lanius* CBAB;

Sturnidae: *Sturnus* CAB;

Passeridae: *Passer* CBCB;

Fringillidae: *Carduelis* CABB; *Chloris* CABB; *Coccothraustes* CABC; *Fringilla* DBCC; *Loxia* CACC; *Pinicola* CACC; *Pyrrhula* CAAC;

Emberizidae: *Emberiza* AACC; *Plectrophenax* DACC;

AAAC: *Muscicapa*;

AABA: *Luscinia*; *Phylloscopus*;

AABB: *Aegithalos*; *Sitta*;

AACC: *Emberiza*;

ABAC: *Certhia*;

ABBA: *Hippolais*; *Luscinia*;

ABBB: *Phoenicurus*; *Regulus*;

ABBC: *Saxicola*;

BAAC: *Erithacus*; *Oenanthe*;

BBAB: *Acrocephalus*;

BBBA: *Cettia*;

BBBB: *Sylvia*;

BBBC: *Oriolus*;

CAAB: *Melanocorypha*;

CAAC: *Monticola*; *Pyrrhula*;

CABA: *Galerida*; *Riparia*; *Remiz*;

CABB: *Carduelis*; *Chloris*;

CABC: *Coccothraustes*; *Sturnus*;

CACA: *Motacilla*;

CACB: *Alauda*;

CACC: *Anthus*; *Loxia*; *Lullula*; *Pinicola*;

CBBA: *Bombycilla*; *Delichon*; *Parus*;

CBCB: *Locustella*; *Passer*;

CBCC: *Calandrella*;

DABA: *Panurus*;

DACC: *Plectrophenax*;

DBAC: *Turdus*;

DBCB: *Prunella*;

DBCC: *Fringilla*;

3. *Scapula* (Figure 6, Plate 9–12, Table 3)

3.1. the length of the branches of *acromion*:

- A. symmetrically (equal): *Acrocephalus*; *Anthus*; *Calandrella*; *Carduelis*; *Certhia*; *Cettia*; *Coccothraustes*; *Delichon*; *Emberiza*; *Hippolais*; *Locustella*; *Lullula*; *Luscinia*; *Monticola*; *Motacilla*; *Oenanthe*; *Parus*; *Passer*; *Phylloscopus*; *Pyrrhula*; *Sturnus*; *Sylvia*; *Turdus*;
- B. asymmetrically (unequal): *Alauda*; *Bombycilla*; *Chloris*; *Eremophila*; *Erithacus*; *Fringilla*; *Galerida*; *Hirundo*; *Lanius*; *Loxia*; *Luscinia*; *Melanocorypha*; *Muscicapa*; *Oriolus*; *Panurus*; *Phoenicurus*; *Pinicola*; *Plectrophenax*; *Prunella*; *Remiz*; *Riparia*; *Saxicola*; *Serinus*; *Sitta*; *Troglodytes*;

3.2. the shape of the branches of *acromion*:

- A. symmetrically (equal): *Acrocephalus*; *Carduelis*; *Coccothraustes*; *Delichon*; *Emberiza*; *Erithacus*; *Hippolais*; *Luscinia*; *Motacilla*; *Muscicapa*; *Passer*; *Phylloscopus*; *Turdus*;
- B. asymmetrically (unequal): *Alauda*; *Anthus*; *Bombycilla*; *Calandrella*; *Certhia*; *Cettia*; *Chloris*; *Eremophila*; *Fringilla*; *Galerida*; *Hirundo*; *Lanius*; *Locustella*; *Loxia*; *Lullula*; *Luscinia*; *Melanocorypha*; *Monticola*; *Oenanthe*;

Oriolus; *Panurus*; *Parus*; *Phoenicurus*; *Pinicola*; *Plectrophenax*; *Prunella*; *Pyrrhula*; *Remiz*; *Riparia*; *Saxicola*; *Serinus*; *Sitta*; *Sturnus*; *Sylvia*; *Troglodytes*;

3.3. the *apex dorsalis* (dorsal branch):

- A. short and blunted: *Acrocephalus*; *Certhia*; *Cettia*; *Delichon*; *Erithacus*; *Hirundo*; *Locustella*; *Panurus*; *Plectrophenax*; *Riparia*; *Sitta*;
- B. short and pointed: *Serinus*; *Troglodytes*;
- C. long and blunted: *Anthus*; *Carduelis*; *Coccothraustes*; *Emberiza*; *Eremophila*; *Fringilla*; *Hippolais*; *Lanius*; *Loxia*; *Luscinia*; *Melanocorypha*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Parus*; *Passer*; *Phylloscopus*; *Pinicola*; *Prunella*; *Pyrrhula*; *Sturnus*; *Turdus*;
- D. long and pointed: *Bombycilla*; *Calandrella*; *Chloris*; *Galerida*; *Monticola*; *Phoenicurus*; *Saxicola*; *Sylvia*;
- E. with a cut-off end: *Alauda*; *Lullula*; *Luscinia*; *Remiz*;

3.4. the *apex lateralis* (lateral branch):

- A. short and blunted: *Certhia*; *Delichon*; *Erithacus*; *Galerida*; *Lanius*; *Melanocorypha*; *Loxia*; *Oriolus*; *Phoenicurus*; *Pinicola*; *Plectrophenax*; *Saxicola*; *Troglodytes*;
- B. short and pointed: *Bombycilla*; *Cettia*; *Hirundo*; *Locustella*; *Remiz*;
- C. long and blunted: *Acrocephalus*; *Alauda*; *Anthus*; *Calandrella*; *Carduelis*; *Coccothraustes*; *Emberiza*; *Eremophila*; *Fringilla*; *Hippolais*; *Lullula*; *Luscinia*; *Luscinia*; *Motacilla*; *Monticola*; *Muscicapa*; *Oenanthe*; *Panurus*; *Parus*; *Passer*; *Phylloscopus*; *Pyrrhula*; *Riparia*; *Sylvia*; *Sturnus*; *Serinus*; *Turdus*;
- D. long and pointed: *Chloris*; *Sitta*;

3.5. the pit between the branches:

- A. deep and symmetrical: *Alauda*; *Bombycilla*; *Calandrella*; *Carduelis*; *Chloris*; *Coccothraustes*; *Emberiza*; *Fringilla*; *Lanius*; *Lullula*; *Melanocorypha*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Parus*; *Passer*; *Remiz*; *Sylvia*; *Turdus*;
- B. deep and unsymmetrical: *Anthus*; *Eremophila*; *Phoenicurus*; *Pinicola*; *Serinus*; *Sturnus*;
- C. shallow and symmetrical: *Acrocephalus*; *Cettia*; *Delichon*; *Erithacus*; *Galerida*; *Hippolais*; *Hirundo*; *Locustella*; *Luscinia*; *Luscinola*; *Monticola*; *Phylloscopus*; *Plectrophenax*; *Pyrrhula*; *Riparia*; *Troglodytes*;
- D. shallow and unsymmetrical: *Certhia*; *Loxia*; *Panurus*; *Prunella*; *Saxicola*; *Sitta*;

Alaudidae: *Alauda* BBECA; *Calandrella* ABDCA; *Eremophila* BBCCB; *Galerida* BBDAC; *Lullula* ABECA; *Melanocorypha* BBCCA;

Hirundinidae: *Delichon* AAAAC; *Hirundo* BBABC; *Riparia* BBACC

Paridae: *Panurus* BAACD; *Parus* ABCCA; *Remiz* BBEBA;

Certhiidae: *Certhia* ABAAD;

Sittidae: *Sitta* BBADD;

Muscicapidae: *Erithacus* BAAAC; *Luscinia* BBECC; *Monticola* ABDCC; *Muscicapa* BACCA; *Oenanthe* ABCCA; *Phoenicurus* BBDAB; *Saxicola* BBDAD;

Turdidae: *Turdus* AACCA;

Oriolidae: *Oriolus* BBCCA;

Sylviidae: *Acrocephalus* AAACC; *Cettia* ABABC; *Hippolais* AACCC; *Locustella* ABABC; *Luscinola* AACCC; *Phylloscopus* AACCC; *Sylvia* ABDCA;

Motacillidae: *Anthus* ABCCB; *Motacilla* AACCA;

Bombycillidae: *Bombycilla* BBDBA;

Troglodytidae: *Troglodytes* BBBAC;

Prunellidae: *Prunella* BBCAD;

Laniidae: *Lanius* BBCCA;

Sturnidae: *Sturnus* ABCCB;

Passeridae: *Passer* AACCA;

Fringillidae: *Carduelis* AACCA; *Chloris* BBDDA; *Coccothraustes* AACCA; *Fringilla* BBCCA; *Loxia* BBCAD; *Pinicola* BBCAB; *Pyrrhula* ABCCC; *Serinus* BBBCB;

Emberizidae: *Emberiza* AACCA; *Plectrophenax* BBAAC;

AAAAC: *Delichon*;

AACCA: *Carduelis*; *Coccothraustes*; *Emberiza*; *Motacilla*; *Passer*; *Turdus*;

AAACC: *Acrocephalus*;

AACCC: *Hippolais*; *Luscinola*; *Phylloscopus*;

ABAAD: *Certhia*;

ABABC: *Cettia*; *Locustella*;

ABBAB: *Serinus*;

ABCCA: *Emberiza*; *Oenanthe*; *Parus*;

ABCCB: *Anthus*; *Sturnus*;

ABCCC: *Pyrrhula*;

ABDCA: *Calandrella*; *Sylvia*;

ABDCC: *Monticola*;

ABECA: *Lullula*;

BAAAC: *Erithacus*;

BACCA: *Muscicapa*;

BBAAC: *Plectrophenax*;

BBABC: *Hirundo*;

BBACB: *Anthus*;

BBACB: *Loxia*;

BBACC: *Riparia*;

BBACD: *Panurus*;

BBADD: *Sitta*;

BBBAC: *Troglodytes*;

BBBCB: *Serinus*;

BBBCD: *Saxicola*;

BBCAA: *Lanius*; *Melanocorypha*; *Oriolus*;

BBCAB: *Pinicola*;

BBCAD: *Loxia*; *Prunella*;

BBCCA: *Fringilla*;

BBCCB: *Eremophila*;
BBDAB: *Phoenicurus*;
BBDAC: *Galerida*;
BBDAD: *Saxicola*;
BBDDBA: *Bombycilla*;
BBDDA: *Chloris*;
BBEBA: *Remiz*;
BBECA: *Alauda*;
BBECC: *Luscinia*;

4. Humerus (proximal epiphysis) (Figure 7, Plate 13–16, Table 4)

4.1. the tuberculum ventrale:

- A. strongly protruding: *Alauda*; *Bombycilla*; *Certhia*; *Cettia*; *Cinclus*; *Coccothraustes*; *Delichon*; *Erithacus*; *Fringilla*; *Galerida*; *Hirundo*; *Loxia*; *Lullula*; *Luscinia*; *Lusciniola*; *Monticola*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Passer*; *Phoenicurus*; *Phylloscopus*; *Pinicola*; *Pyrrhula*; *Riparia*; *Saxicola*; *Serinus*;
- B. poorly protruding: *Acrocephalus*; *Aegithalos*; *Anthus*; *Carduelis*; *Chloris*; *Emberiza*; *Hippolais*; *Lanius*; *Locustella*; *Melanocorypha*; *Panurus*; *Parus*; *Prunella*; *Sitta*; *Sturnus*; *Sylvia*; *Troglodytes*; *Turdus*;

4.2. the projection of the crista bicipitalis:

- A. prominent and rounded: *Aegithalos*; *Anthus*; *Emberiza*; *Erithacus*; *Galerida*; *Hippolais*; *Lullula*; *Passer*; *Phylloscopus*; *Pinicola*; *Prunella*; *Pyrrhula*; *Riparia*; *Serinus*; *Sitta*; *Sturnus*; *Troglodytes*;
- B. prominent and pointed: *Fringilla*; *Lusciniola*;
- C. truncated: *Acrocephalus*; *Carduelis*; *Certhia*; *Cettia*; *Chloris*; *Cinclus*; *Coccothraustes*; *Delichon*; *Hirundo*; *Lanius*; *Lanius*; *Locustella*; *Loxia*; *Oriolus*; *Parus*; *Sylvia*; *Turdus*;

- D. rounded and not prominent: *Bombycilla*; *Lanius*; *Lullula*; *Luscinia*; *Melanocorypha*; *Motacilla*; *Muscicapa*; *Panurus*; *Saxicola*;
- E. slightly pointed distally: *Alauda*; *Monticola*; *Oenanthe*; *Phoenicurus*; *Turdus*;

4.3. the distal edge of the crista bicipitalis:

- A. flatly curved: *Alauda*; *Bombycilla*; *Chloris*; *Cinclus*; *Delichon*; *Fringilla*; *Loxia*; *Luscinia*; *Panurus*; *Passer*; *Pinicola*; *Prunella*; *Riparia*; *Sturnus*;
- B. strongly curved: *Acrocephalus*; *Aegithalos*; *Anthus*; *Carduelis*; *Certhia*; *Cettia*; *Chloris*; *Coccothraustes*; *Emberiza*; *Erithacus*; *Galerida*; *Hippolais*; *Hirundo*; *Lanius*; *Locustella*; *Lullula*; *Lusciniola*; *Melanocorypha*; *Monticola*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Parus*; *Phoenicurus*; *Phylloscopus*; *Pyrrhula*; *Saxicola*; *Serinus*; *Sitta*; *Sylvia*; *Troglodytes*; *Turdus*;

4.4. the fossa pneumotricipitalis:

- A. split: *Acrocephalus*; *Alauda*; *Bombycilla*; *Certhia*; *Cettia*; *Cinclus*; *Delichon*; *Galerida*; *Hirundo*; *Hippolais*; *Lanius*; *Locustella*; *Lullula*; *Lusciniola*; *Melanocorypha*; *Monticola*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Passer*; *Phoenicurus*; *Phylloscopus*; *Prunella*; *Riparia*; *Saxicola*; *Sturnus*; *Sylvia*; *Turdus*;
- B. no split: *Aegithalos*; *Anthus*; *Carduelis*; *Chloris*; *Coccothraustes*; *Emberiza*; *Erithacus*; *Fringilla*; *Loxia*; *Luscinia*; *Motacilla*; *Panurus*; *Parus*; *Pinicola*; *Pyrrhula*; *Serinus*; *Sitta*; *Troglodytes*;

Alaudidae: *Alauda* AEAA; *Galerida* AABA; *Lullula* ADBA; *Melanocorypha* BDBA;

Hirundinidae: *Delichon* ACAA; *Hirundo* ACBA; *Riparia* AAAA;

Paridae: *Aegithalos* BABB; *Panurus* BDAB; *Parus* BCBB;

Certhiidae: *Certhia* ACBA;

Sittidae: *Sitta* BABB;

Muscicapidae: *Erithacus* AABB; *Luscinia* ADAB; *Monticola* AEBA; *Muscicapra* ADAB; *Oenanthe* AEBA; *Phoenicurus* AEBA; *Saxicola* ADAB;

Turdidae: *Turdus* BEBA;

Oriolidae: *Oriolus* ACBA;

Sylviidae: *Acrocephalus* BCBA; *Cettia* ACBA; *Hippolais* BABA; *Locustella* BCBA; *Luscinia* ABBA; *Phylloscopus* AABA; *Sylvia* BCBA;

Motacillidae: *Anthus* BABB; *Motacilla* ADDB;

Bombycillidae: *Bombycilla* ADAA;

Troglodytidae: *Troglodytes* BABB;

Cinclidae: *Cinclus* ACBA;

Prunellidae: *Prunella* BAAA;

Laniidae: *Lanius* BCBA;

Sturnidae: *Sturnus* BAAA;

Passeridae: *Passer* AAAA;

Fringillidae: *Carduelis* BCBB; *Chloris* ACAB; *Coccothraustes* ACBB; *Fringilla* ABAB; *Loxia* ACAB; *Pinicola* AAAB; *Pyrrhula* AABB; *Serinus* AABB;

Emberizidae: *Emberiza* BABB;

AAAA: *Riparia*; *Passer*;

AAAB: *Pinicola*;

AABA: *Galerida*; *Phylloscopus*;

AABB: *Erithacus*; *Pyrrhula*; *Serinus*;

ABAB: *Fringilla*;

ABBA: *Luscinia*;

ACAA: *Certhia*; *Coccothraustes*; *Delichon*;

ACAB: *Chloris*; *Loxia*;

ACBA: *Cettia*; *Certhia*; *Cinclus*; *Hirundo*; *Oriolus*;

ACBB: *Coccothraustes*;

ADAA: *Bombycilla*;

ADAB: *Luscinia*;

ADBA: *Lullula*; *Muscicapa*; *Saxicola*;

ADBB: *Motacilla*;

AEAA: *Alauda*;

AEBA: *Monticola*; *Oenanthe*; *Phoenicurus*;

BAAA: *Prunella*; *Sturnus*;

BAAB: *Sitta*;

BABA: *Emberiza*; *Hippolais*;

BABB: *Aegithalos*; *Anthus*; *Emberiza*; *Sitta*; *Troglodytes*;

BCAA: *Parus*;

BCBA: *Acrocephalus*; *Lanius*; *Locustella*; *Sylvia*;

BCBB: *Carduelis*; *Parus*;

BDAB: *Panurus*;

BDBA: *Melanocorypha*;

BEBA: *Turdus*;

5. Humerus (distal epiphysis) (Figure 8, Plate 17–20, Table 4)

5.1. the tuberculum supracondylare ventrale:

- A. protuberant: *Acrocephalus*; *Aegithalos*; *Bombycilla*; *Carduelis*; *Certhia*; *Cettia*; *Chloris*; *Cinclus*; *Coccothraustes*; *Delichon*; *Emberiza*; *Erithacus*; *Hippolais*; *Hirundo*; *Loxia*; *Lullula*; *Melanocorypha*; *Monticola*; *Parus*; *Parus*; *Passer*; *Pinicola*; *Riparia*; *Saxicola*; *Serinus*; *Sitta*; *Sturnus*; *Troglodytes*;
- B. not prominent: *Alauda*; *Anthus*; *Fringilla*; *Galerida*; *Lanius*; *Locustella*; *Luscinia*; *Luscinia*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Panurus*; *Phoenicurus*; *Phylloscopus*; *Prunella*; *Pyrrhula*; *Sylvia*; *Turdus*;

5.2. the processus flexorius:

- A. slightly overhanging: *Alauda*; *Carduelis*; *Cinclus*; *Galerida*; *Emberiza*; *Lullula*; *Luscinia*; *Sitta*;

- B. strongly overhanging with rounded ends: *Anthus*; *Bombycilla*; *Certhia*; *Chloris*; *Coccothraustes*; *Emberiza*; *Fringilla*; *Locustella*; *Monticola*; *Motacilla*; *Muscicapa*; *Oriolus*; *Panurus*; *Passer*; *Phoenicurus*; *Prunella*; *Pyrrhula*; *Riparia*; *Saxicola*; *Serinus*; *Sturnus*; *Troglodytes*;
- C. strongly overhanging with severed ends: *Acrocephalus*; *Aegithalos*; *Cettia*; *Erithacus*; *Hippolais*; *Lanius*; *Loxia*; *Luscinia*; *Oenanthe*; *Parus*; *Pinicola*; *Sylvia*; *Turdus*;
- D. markedly protruding conically: *Melanocorypha*; *Phylloscopus*;
- E. asymmetrical strongly protruding: *Delichon*; *Hirundo*; *Riparia*;

5.3. the *incisura intercondylaris*:

- A. concave and wide: *Alauda*; *Cinclus*; *Coccothraustes*; *Delichon*; *Emberiza*; *Galerida*; *Luscinia*; *Melanocorypha*; *Phoenicurus*;
- B. slightly concave: *Anthus*; *Chloris*; *Fringilla*; *Lanius*; *Lullula*; *Luscinia*; *Monticola*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Panurus*; *Parus*; *Passer*; *Prunella*; *Pyrrhula*; *Saxicola*; *Serinus*; *Sitta*; *Sylvia*; *Troglodytes*;
- C. pointed and wide: *Acrocephalus*; *Aegithalos*; *Bombycilla*; *Carduelis*; *Certhia*; *Cettia*; *Erithacus*; *Hippolais*; *Hirundo*; *Locustella*; *Loxia*; *Phylloscopus*; *Pinicola*; *Riparia*; *Sturnus*; *Turdus*;

5.4. the *condylus dorsalis*:

- A. rounded: *Alauda*; *Anthus*; *Bombycilla*; *Carduelis*; *Certhia*; *Cettia*; *Chloris*; *Cinclus*; *Coccothraustes*; *Emberiza*; *Erithacus*; *Fringilla*; *Galerida*; *Hirundo*; *Lanius*; *Locustella*; *Loxia*; *Lullula*; *Luscinia*; *Luscinia*; *Luscinia*; *Melanocorypha*; *Monticola*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Panurus*; *Parus*;

Passer; *Phoenicurus*; *Phylloscopus*; *Pinicola*; *Prunella*; *Pyrrhula*; *Saxicola*; *Serinus*; *Sturnus*; *Sylvia*; *Troglodytes*;

- B. asymmetric: *Acrocephalus*; *Aegithalos*; *Delichon*; *Hippolais*; *Oriolus*; *Riparia*; *Sitta*; *Turdus*;

5.5. the *processus supracondylaris dorsalis*:

- A. single and slightly protruding: *Prunella*;
- B. single and strongly protruding: *Cinclus*; *Delichon*; *Lanius*; *Locustella*; *Loxia*; *Melanocorypha*; *Muscicapa*; *Panurus*; *Serinus*; *Troglodytes*; *Turdus*;
- C. two-pronged equal: *Aegithalos*; *Alauda*; *Certhia*;
- D. two-pronged unequal: *Acrocephalus*; *Anthus*; *Bombycilla*; *Carduelis*; *Cettia*; *Chloris*; *Coccothraustes*; *Emberiza*; *Erithacus*; *Fringilla*; *Galerida*; *Hippolais*; *Hirundo*; *Lullula*; *Luscinia*; *Luscinia*; *Monticola*; *Motacilla*; *Oenanthe*; *Oriolus*; *Parus*; *Passer*; *Phylloscopus*; *Phoenicurus*; *Pinicola*; *Pyrrhula*; *Riparia*; *Saxicola*; *Sitta*; *Sturnus*; *Sylvia*;

Alaudidae: *Alauda* BAAAC; *Galerida* BAAAD; *Lullula* AAABD; *Melanocorypha* ADAAB;

Hirundinidae: *Delichon* AEABB; *Hirundo* AECAD; *Riparia* AECBD;

Paridae: *Aegithalos* ACCBC; *Panurus* BBBAB; *Parus* ACBAD;

Certhiidae: *Certhia* ABCAC;

Sittidae: *Sitta* AABBD;

Muscicapidae: *Erithacus* ABCAD; *Luscinia* BCBAD; *Monticola* ABBAD; *Muscicapa* BBBAB; *Oenanthe* BCBAD; *Phoenicurus* BBAAD; *Saxicola* ABBAD;

Turdidae: *Turdus* BCCBB;

Oriolidae: *Oriolus* BBBBD;

Sylviidae: *Acrocephalus* ACCBD; *Cettia* ACCAD; *Hippolais* ACCBD; *Locustella*

BBCAB; *Luscinia* BAAAD; *Phylloscopus* BDCAD; *Sylvia* BCBAD;

Motacillidae: *Anthus* BBBAD; *Motacilla* BBBAD;

Bombycillidae: *Bombycilla* ABCAD;

Troglodytidae: *Troglodytes* ABBAB;

Cinclidae: *Cinclus* AAAAB;

Prunellidae: *Prunella* BBBA;

Laniidae: *Lanius* BCBAB;

Sturnidae: *Sturnus* ABCAD;

Passeridae: *Passer* ABBAD;

Fringillidae: *Carduelis* AACAD; *Chloris* ABBAD; *Coccothraustes* ABAAD; *Fringilla* BBBAD; *Loxia* ACCAB; *Pinicola* ACCAD; *Pyrrhula* BBBAD; *Serinus* ABBAB;

Emberizidae: *Emberiza* ABAAD;

AAAAB: *Cinclus*;

AAABD: *Lullula*;

AABBD: *Sitta*;

ABAAD: *Coccothraustes*; *Emberiza*;

ABBAB: *Serinus*; *Troglodytes*;

ABBAD: *Chloris*; *Monticola*; *Passer*; *Saxicola*;

ABCAC: *Certhia*;

ABCAD: *Bombycilla*; *Erithacus*; *Sturnus*;

ACBAD: *Parus*;

ACCAB: *Loxia*;

ACCAD: *Cettia*; *Pinicola*;

ACCBC: *Aegithalos*;

ACCBD: *Acrocephalus*; *Hippolais*;

ADAAB: *Melanocorypha*;

AEABB: *Delichon*;

AECAD: *Hirundo*;

AECBD: *Riparia*;

BAAAC: *Alauda*;

BAAAD: *Galerida*; *Luscinia*;

BBAAD: *Phoenicurus*;

BBBAA: *Prunella*;

BBBAB: *Muscicapa*; *Panurus*;

BBBAD: *Anthus*; *Fringilla*; *Motacilla*; *Pyrrhula*;

BBBBD: *Oriolus*;

BBCAB: *Locustella*;

BCBAB: *Lanius*;

BCBAD: *Luscinia*; *Oenanthe*; *Sylvia*;

BCCBB: *Turdus*;

BDCAD: *Phylloscopus*;

6. *Ulna* (proximal epiphysis) (Figure 9, Plate 21–24, Table 5)

6.1. the olecranon:

- A. short and pointed: *Alauda*; *Certhia*; *Hirundo*; *Locustella*; *Muscicapa*; *Pyrrhula*;
- B. short and blunt: *Aegithalos*; *Carduelis*; *Chloris*; *Coccothraustes*; *Erithacus*; *Galerida*; *Hippolais*; *Lullula*; *Oenanthe*; *Oriolus*; *Parus*; *Phoenicurus*; *Phylloscopus*; *Pinicola*; *Plectrophenax*; *Regulus*; *Remiz*; *Riparia*; *Saxicola*; *Sitta*;
- C. long, narrow and pointed: *Calandrella*; *Delichon*; *Fringilla*; *Luscinia*; *Passer*; *Prunella*; *Turdus*;
- D. long and blunt: *Acrocephalus*; *Anthus*; *Bombycilla*; *Cinclus*; *Emberiza*; *Eremophila*; *Loxia*; *Luscinia*; *Lanius*; *Motacilla*; *Panurus*; *Serinus*; *Sturnus*; *Sylvia*; *Troglodytes*;

6.2. the cotyla dorsalis:

- A. semicircular: *Aegithalos*; *Anthus*; *Bombycilla*; *Calandrella*; *Carduelis*; *Certhia*; *Chloris*; *Cinclus*; *Erithacus*; *Fringilla*; *Hippolais*; *Lanius*; *Loxia*; *Lullula*; *Luscinia*; *Motacilla*; *Muscicapa*; *Parus*; *Passer*; *Phoenicurus*; *Phylloscopus*; *Plectrophenax*; *Prunella*; *Pyrrhula*; *Regulus*; *Remiz*; *Riparia*; *Sitta*; *Sturnus*; *Turdus*;
- B. conical: *Acrocephalus*; *Coccothraustes*; *Galerida*; *Eremophila*; *Hirundo*; *Locustella*; *Panurus*; *Serinus*;
- C. elongated conical: *Luscinia*; *Sylvia*;
- D. truncated: *Alauda*; *Emberiza*; *Oenanthe*; *Saxicola*; *Troglodytes*;

- E. asymmetrical: *Delichon*; *Oriolus*; *Pinicola*;

6.3. the *tuberculum ligamentum collateralis ventralis*:

- A. developed: *Aegithalos*; *Alauda*; *Anthus*; *Bombycilla*; *Calandrella*; *Certhia*; *Cinclus*; *Delichon*; *Eremophila*; *Erithacus*; *Fringilla*; *Galerida*; *Hippolais*; *Hirundo*; *Loxia*; *Lullula*; *Luscinia*; *Luscinia*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Parus*; *Passer*; *Phoenicurus*; *Pinicola*; *Plectrophenax*; *Pyrrhula*; *Regulus*; *Remiz*; *Riparia*; *Saxicola*; *Sitta*; *Serinus*; *Sylvia*; *Turdus*;
- B. undeveloped: *Acrocephalus*; *Carduelis*; *Chloris*; *Coccothraustes*; *Emberiza*; *Lanius*; *Locustella*; *Oriolus*; *Panurus*; *Phylloscopus*; *Prunella*; *Sturnus*; *Troglodytes*;

Alaudidae: *Alauda* ADA; *Calandrella* CAA; *Eremophila* DBA; *Galerida* BBA; *Lullula* BAA;

Hirundinidae: *Delichon* CEA; *Hirundo* ABA; *Riparia* BAA;

Paridae: *Aegithalos* BAA; *Panurus* DBB; *Parus* BAB; *Remiz* BAA;

Certhiidae: *Certhia* AAA;

Sittidae: *Sitta* BAA;

Muscicapidae: *Erithacus* BAA; *Luscinia* CAA; *Muscicapa* AAA; *Oenanthe* BDA; *Phoenicurus* BAA; *Saxicola* BDA;

Turdidae: *Turdus* CAA;

Oriolidae: *Oriolus* DEB;

Sylviidae: *Acrocephalus* DBB; *Hippolais* BAA; *Locustella* ABB; *Luscinia* DCA; *Phylloscopus* BAB; *Regulus* BAA; *Sylvia* DCA;

Motacillidae: *Anthus* DAA; *Motacilla* DAA;

Bombycillidae: *Bombycilla* DAA;

Troglodytidae: *Troglodytes* DDB;

Cinclidae: *Cinclus* DAA;

Prunellidae: *Prunella* CAB;

Laniidae: *Lanius* DAB;

Sturnidae: *Sturnus* DAB;

Passeridae: *Passer* CAA;

Fringillidae: *Carduelis* BAB; *Chloris* BAB; *Coccothraustes* BBB; *Fringilla* CAA; *Loxia* DAA; *Pinicola* BEA; *Pyrrhula* AAA; *Serinus* DBA;

Emberizidae: *Emberiza* DDB; *Plectrophenax* BAA;

AAA: *Certhia*; *Muscicapa*; *Pyrrhula*;

ABA: *Hirundo*;

ABB: *Locustella*;

ABD: *Monticola*;

ADA: *Alauda*;

BAA: *Aegithalos*; *Erithacus*; *Hippolais*; *Lullula*; *Parus*; *Phoenicurus*; *Plectrophenax*; *Regulus*; *Remiz*; *Riparia*; *Sitta*;

BAB: *Carduelis*; *Chloris*; *Phylloscopus*;

BBA: *Galerida*;

BBB: *Coccothraustes*;

BDA: *Oenanthe*; *Saxicola*;

BEA: *Pinicola*;

BEB: *Oriolus*;

CAA: *Calandrella*; *Fringilla*; *Luscinia*; *Passer*; *Turdus*;

CAB: *Prunella*;

CEA: *Delichon*;

DAA: *Anthus*; *Bombycilla*; *Cinclus*; *Loxia*; *Motacilla*;

DAB: *Lanius*; *Sturnus*;

DBA: *Eremophila*; *Serinus*;

DBB: *Acrocephalus*;

DBB: *Panurus*;

DCA: *Luscinia*; *Sylvia*;

DDB: *Emberiza*; *Troglodytes*;

7. *Ulna (distal epiphysis)* (Figure 10, Plate 25–28, Table 5)

7.1. the shape of the *condylus dorsalis*:

- A. pointed cone: *Aegithalos*; *Calandrella*; *Carduelis*; *Delichon*; *Emberiza*; *Eremophila*; *Galerida*; *Loxia*; *Luscinia*; *Phylloscopus*; *Regulus*; *Riparia*; *Sitta*; *Sylvia*; *Turdus*;
- B. blunted cone: *Acrocephalus*; *Alauda*; *Anthus*; *Chloris*; *Cinclus*; *Coccothraustes*; *Erithacus*; *Fringilla*; *Hippolais*; *Hirundo*; *Lanius*; *Locustella*; *Lullula*; *Luscinia*; *Motacilla*; *Parus*; *Phoenicurus*; *Pinicola*; *Plectrophenax*; *Prunella*; *Pyrrhula*; *Remiz*; *Saxicola*; *Serinus*; *Troglodytes*;
- C. rounded: *Bombycilla*; *Certhia*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Panurus*; *Passer*; *Sturnus*;

7.2. the shape of the *sulcus intercondylaris*:

- A. curved: *Acrocephalus*; *Anthus*; *Calandrella*; *Cinclus*; *Delichon*; *Emberiza*; *Eremophila*; *Erithacus*; *Fringilla*; *Galerida*; *Hippolais*; *Lanius*; *Locustella*; *Loxia*; *Lullula*; *Luscinia*; *Luscinia*; *Oriolus*; *Parus*; *Phoenicurus*; *Phylloscopus*; *Plectrophenax*; *Prunella*; *Pyrrhula*; *Regulus*; *Remiz*; *Saxicola*; *Serinus*; *Sitta*; *Sylvia*; *Troglodytes*; *Turdus*;
- B. asymmetrically curved: *Aegithalos*; *Carduelis*; *Riparia*;
- C. pointed: *Alauda*; *Bombycilla*; *Certhia*; *Chloris*; *Coccothraustes*; *Hirundo*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Panurus*; *Passer*; *Pinicola*; *Sturnus*;

7.3. the shape of the *condylus ventralis*:

- A. conical: *Calandrella*; *Delichon*; *Emberiza*; *Loxia*; *Riparia*; *Sylvia*;
- B. blunt cone: *Acrocephalus*; *Aegithalos*; *Anthus*; *Chloris*; *Cinclus*; *Eremophila*;

Fringilla; *Galerida*; *Hirundo*; *Locustella*; *Lullula*; *Luscinia*; *Parus*; *Phoenicurus*; *Phylloscopus*; *Plectrophenax*; *Regulus*; *Remiz*; *Serinus*; *Sitta*; *Troglodytes*;

- C. rounded: *Alauda*; *Bombycilla*; *Carduelis*; *Certhia*; *Coccothraustes*; *Erithacus*; *Erithacus*; *Hippolais*; *Lanius*; *Luscinia*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Panurus*; *Passer*; *Pinicola*; *Prunella*; *Pyrrhula*; *Saxicola*; *Sturnus*; *Turdus*;

7.4. the shape of the *tuberculum carpalae*:

- A. semicircular: *Aegithalos*; *Alauda*; *Bombycilla*; *Calandrella*; *Certhia*; *Chloris*; *Coccothraustes*; *Emberiza*; *Eremophila*; *Erithacus*; *Fringilla*; *Galerida*; *Hippolais*; *Hirundo*; *Lanius*; *Loxia*; *Lullula*; *Luscinia*; *Luscinia*; *Muscicapa*; *Panurus*; *Passer*; *Pinicola*; *Plectrophenax*; *Pyrrhula*; *Serinus*; *Sitta*; *Sturnus*; *Sylvia*; *Troglodytes*; *Turdus*;
- B. conical: *Phoenicurus*; *Phylloscopus*;
- C. asymmetrical: *Acrocephalus*; *Anthus*; *Carduelis*; *Delichon*; *Locustella*; *Motacilla*; *Oenanthe*; *Oriolus*; *Parus*; *Prunella*; *Remiz*; *Riparia*; *Saxicola*;
- D. truncated: *Cinclus*; *Regulus*;

Alaudidae: *Alauda* BCCA; *Calandrella* AAAA; *Eremophila* AABA; *Galerida* AABA; *Lullula* BABA;

Hirundinidae: *Delichon* AAAC; *Hirundo* BCBA; *Riparia* ABAC;

Paridae: *Aegithalos* ABBA; *Panurus* CCCA; *Parus* BABC; *Remiz* BABC;

Certhiidae: *Certhia* CCCA;

Sittidae: *Sitta* AABA;

Muscicapidae: *Erithacus* BACA; *Luscinia* BACA; *Muscicapa* CCCA; *Oenanthe* CCCC; *Phoenicurus* BABB; *Saxicola* BACC;

Turdidae: *Turdus* AACA;

Oriolidae: *Oriolus* CACC;

Sylviidae: *Acrocephalus* BABC; *Hippolais* BACA; *Locustella* BABC; *Luscinia* AABA; *Phylloscopus* AABB; *Regulus* AABD; *Sylvia* AAAA;

Motacillidae: *Anthus* BABC; *Motacilla* BCCC;

Bombycillidae: *Bombycilla* CCCA;

Troglodytidae: *Troglodytes* BABA;

Cinclidae: *Cinclus* BABD;

Prunellidae: *Prunella* BACC;

Laniidae: *Lanius* BACA;

Sturnidae: *Sturnus* CCCA;

Passeridae: *Passer* CCCA;

Fringillidae: *Carduelis* ABCC; *Chloris* BCBA; *Coccothraustes* BCCA; *Fringilla* BABA; *Loxia* AAAA; *Pinicola* BCCA; *Pyrrhula* BACA; *Serinus* BABA;

Emberizidae: *Emberiza* AAAA; *Plectrophenax* BABA;

AAAA: *Calandrella*; *Emberiza*; *Loxia*; *Sylvia*;

AAAC: *Delichon*;

AABA: *Eremophila*; *Galerida*; *Luscinia*; *Sitta*;

AABB: *Phylloscopus*;

AABD: *Regulus*;

AAAA: *Turdus*;

ABAC: *Riparia*;

ABBA: *Aegithalos*;

ABCC: *Carduelis*;

ACBB: *Erithacus*;

BABA: *Fringilla*; *Lullula*; *Plectrophenax*; *Serinus*; *Troglodytes*;

BABB: *Phoenicurus*;

BABC: *Acrocephalus*; *Anthus*; *Locustella*; *Parus*; *Remiz*;

BABD: *Cinclus*;

BACA: *Erithacus*; *Hippolais*; *Lanius*; *Luscinia*; *Luscinia*; *Pyrrhula*;

BACC: *Prunella*; *Saxicola*;

BCBA: *Chloris*; *Hirundo*;

BCCA: *Alauda*; *Coccothraustes*; *Pinicola*;

BCCC: *Motacilla*;

CACC: *Oriolus*;

CCCA: *Bombycilla*; *Certhia*; *Muscicapa*; *Panurus*; *Passer*; *Sturnus*;

CCCC: *Oenanthe*;

8. *Carpometacarpus* (Figure 11–12, Plate 29–32, Table 6)

8.1. the shape of the *a trochlea carpalis*:

- A. semicircle: *Acrocephalus*; *Aegithalos*; *Anthus*; *Calandrella*; *Carduelis*; *Erit-hacus*; *Fringilla*; *Galerida*; *Hirundo*; *Loxia*; *Motacilla*; *Oenanthe*; *Oriolus*; *Parus*; *Passer*; *Phoenicurus*; *Plectrophe-nax*; *Regulus*; *Saxicola*; *Sylvia*; *Turdus*;
- B. symmetrically cone: *Delichon*; *Prunella*;
- C. symmetrically blunt cone: *Alauda*; *Bombycilla*; *Chloris*; *Coccothraustes*; *Emberiza*; *Eremophila*; *Hippolais*; *Lani-us*; *Locustella*; *Lullula*; *Luscinia*; *Mon-ticola*; *Muscicapa*; *Pinicola*; *Pyrrhula*; *Riparia*; *Serinus*; *Sitta*; *Sturnus*; *Troglodytes*;
- D. asymmetrically cone: *Certhia*; *Cinclus*; *Panurus*; *Phylloscopus*;

8.2. the form of the *processus extensorius*:

- A. straight pointy cone: *Aegithalos*; *Hip-polais*; *Luscinia*; *Parus*; *Regulus*
- B. slanting pointy cone: *Certhia*; *Cinclus*; *Coccothraustes*; *Hirundo*;
- C. straight blunt cone: *Acrocephalus*; *Alauda*; *Anthus*; *Emberiza*; *Erithacus*; *Loxia*; *Lullula*; *Motacilla*; *Muscicapa*; *Phylloscopus*; *Plectrophenax*; *Prunella*; *Pyrrhula*; *Saxicola*;
- D. leaning blunt cone: *Bombycilla*; *Ca-landrella*; *Cinclus*; *Delichon*; *Eremophila*; *Lanius*; *Locustella*; *Monticola*; *Oriolus*; *Passer*; *Pinicola*; *Serinus*; *Sitta*; *Sturnus*; *Troglodytes*; *Turdus*;

- E. rounded tips: *Carduelis*; *Chloris*; *Emberiza*; *Fringilla*; *Loxia*; *Oenanthe*; *Panurus*; *Sylvia*;
- F. asymmetrically: *Galerida*; *Phoenicurus*; *Riparia*;

8.3. the shape of the *processus alularis*:

- A. rectangular: *Acrocephalus*; *Alauda*; *Anthus*; *Chloris*; *Erithacus*; *Hippolais*; *Hirundo*; *Lanius*; *Loxia*; *Lullula*; *Motacilla*; *Oenanthe*; *Phylloscopus*; *Plectrophenax*; *Saxicola*; *Serinus*; *Turdus*;
- B. rounded rectangular: *Calandrella*; *Carduelis*; *Delichon*; *Eremophila*; *Fringilla*; *Monticola*; *Panurus*; *Phoenicurus*; *Pinicola*; *Prunella*; *Sturnus*;
- C. conical: *Aegithalos*; *Bombycilla*; *Cinclus*; *Coccothraustes*; *Galerida*; *Luscinia*; *Oriolus*; *Parus*; *Passer*; *Pyrrhula*; *Riparia*; *Sitta*; *Troglodytes*;
- D. irregular: *Certhia*; *Emberiza*; *Locustella*; *Muscicapa*; *Regulus*; *Sylvia*;

8.4. the form of the *fovea subalularis*:

- A. conical groove: *Aegithalos*; *Alauda*; *Erithacus*; *Hippolais*; *Luscinia*; *Motacilla*; *Panurus*; *Passer*; *Phoenicurus*; *Phylloscopus*; *Pinicola*; *Prunella*; *Pyrrhula*; *Saxicola*; *Sylvia*;
- B. irregular conical groove: *Acrocephalus*; *Anthus*; *Calandrella*; *Galerida*; *Lullula*; *Plectrophenax*;
- C. trapezoidal groove: *Bombycilla*; *Certhia*; *Emberiza*; *Eremophila*; *Hirundo*; *Lanius*; *Monticola*; *Muscicapa*; *Sitta*; *Sturnus*;
- D. irregular trapezoidal groove: *Coccothraustes*; *Riparia*; *Serinus*;
- E. semicircular groove: *Cinclus*; *Delichon*; *Regulus*; *Turdus*;
- F. miss: *Carduelis*; *Chloris*; *Fringilla*; *Locustella*; *Loxia*; *Oenanthe*; *Oriolus*; *Parus*; *Troglodytes*;

8.4. the character of the *protuberantia metacarpale majus*:

- A. advanced cone-shaped: *Aegithalos*; *Bombycilla*; *Cinclus*; *Hirundo*; *Muscicapa*; *Phylloscopus*; *Pinicola*; *Pyrrhula*; *Regulus*; *Riparia*; *Sitta*;
- B. advanced blunt cone-shaped: *Certhia*; *Delichon*; *Monticola*; *Passer*; *Prunella*;
- C. undeveloped conical: *Acrocephalus*; *Alauda*; *Anthus*; *Calandrella*; *Carduelis*; *Chloris*; *Coccothraustes*; *Eremophila*; *Fringilla*; *Galerida*; *Hippolais*; *Loxia*; *Luscinia*; *Motacilla*; *Panurus*; *Parus*; *Phoenicurus*; *Saxicola*; *Serinus*; *Sturnus*;
- D. undeveloped flattened: *Emberiza*; *Erithacus*; *Locustella*; *Lullula*; *Oriolus*; *Plectrophenax*; *Sylvia*; *Turdus*;
- E. miss: *Lanius*; *Oenanthe*; *Troglodytes*;

8.5. the shape of the *facies articularis digitale minor*:

- A. pointly concave: *Acrocephalus*; *Alauda*; *Erithacus*; *Hippolais*; *Luscinia*; *Oenanthe*; *Panurus*; *Pinicola*; *Prunella*; *Sylvia*; *Turdus*;
- B. rounded: *Aegithalos*; *Carduelis*; *Certhia*; *Cinclus*; *Locustella*; *Loxia*; *Lullula*; *Passer*; *Phylloscopus*; *Plectrophenax*;
- C. cut-off: *Anthus*; *Chloris*; *Coccothraustes*; *Galerida*; *Motacilla*; *Oriolus*; *Parus*; *Pyrrhula*; *Riparia*; *Troglodytes*;
- D. wavy: *Bombycilla*; *Emberiza*; *Phoenicurus*; *Saxicola*; *Serinus*;
- E. concave: *Calandrella*; *Delichon*; *Eremophila*; *Fringilla*; *Hirundo*; *Lanius*; *Monticola*; *Muscicapa*; *Regulus*; *Sitta*; *Sturnus*;

Alaudidae: *Alauda* CCAACA; *Calandrella* ADBBCE; *Eremophila* CDBCCE; *Galerida* AFCBCC; *Lullula* CCABDB;

Hirundinidae: *Delichon* BDBEBE; *Hirundo* ABACAE; *Riparia* CFCDAC;

Paridae: *Aegithalos* AACAAB; *Panurus* DEBACA; *Parus* ADCFCC;

Certhiidae: *Certhia* DBDCBB;

Sittidae: *Sitta* CDCBAE;

Muscicapidae: *Erithacus* ACAADA; *Luscinia* CACACA *Monticola* CDBCBE; *Muscicapra* CCDCAE; *Oenanthe* AEAFEA; *Phoenicurus* AFBACD; *Saxicola* ACAACD;

Turdidae: *Turdus* ADAEDA;

Oriolidae: *Oriolus* ADCFDC;

Sylviidae: *Acrocephalus* ACABCA; *Hippolais* CAAACA; *Locustella* CDDFDB; *Phylloscopus* DCAAAB; *Regulus* AADEAE; *Sylvia* AEDADA;

Motacillidae: *Anthus* ACABCC; *Motacilla* ACAACC;

Bombycillidae: *Bombycilla* CDCCAD;

Troglodytidae: *Troglodytes* CDCFEC;

Cinclidae: *Cinclus* DBCEAB;

Prunellidae: *Prunella* BCBABA;

Laniidae: *Lanius* CDACEE;

Sturnidae: *Sturnus* CDBCCE;

Passeridae: *Passer* ADCABB;

Fringillidae: *Carduelis* AEBFCB; *Chloris* CFAFCC; *Coccothraustes* CBCDCC; *Fringilla* AEBFCE; *Loxia* ACAFCB; *Pinicola* CDBAAA; *Pyrrhula* CCCAAC; *Serinus* CDBDCD;

Emberizidae: *Emberiza* CCDCEDD; *Plectrophenax* ACABDB;

AACAAB: *Aegithalos*;

AADEAE: *Regulus*;

ABACAE: *Hirundo*;

ACAACC: *Motacilla*;

ACAACD: *Saxicola*;

ACAADA: *Erithacus*;

ACABCA: *Acrocephalus*;

ACABCC: *Anthus*;

ACABDB: *Plectrophenax*;

ACAFCB: *Loxia*;

ADAEDA: *Turdus*;

ADBBCE: *Calandrella*;

ADCABB: *Passer*;

ADCFCC: *Parus*;

ADCFDC: *Oriolus*;

AEAFEA: *Oenanthe*;

AEBFCB: *Carduelis*;

AEBFCE: *Fringilla*;

AEDADA: *Sylvia*;

AFBACD: *Phoenicurus*;

AFCBCC: *Galerida*;

BCBBBA: *Prunella*;

BDBEBE: *Delichon*;

CAAACA: *Hippolais*;

CACACA: *Luscinia*;

CBCDCC: *Coccothraustes*;

CCAACA: *Alauda*;

CCABDB: *Lullula*;

CCCAAC: *Pyrrhula*;

CCDCAE: *Muscicapra*;

CCDCED: *Emberiza*;

CDACEE: *Lanius*;

CDBAAA: *Pinicola*;

CDBCBE: *Monticola*;

CDBDCD: *Serinus*;

CDBCCE: *Eremophila*; *Sturnus*;

CDCBAE: *Sitta*;

CDCCAD: *Bombycilla*;

CDCFEC: *Troglodytes*;

CDDFDB: *Locustella*;

CEDAAB: *Aegithalos*;

CFAFCC: *Chloris*;

CFCDAC: *Riparia*;

DBCEAB: *Cinclus*;

DBDCBB: *Certhia*;

DCAAAB: *Phylloscopus*;

DEBACA: *Panurus*;

9. *Phalanx proximalis digiti majoris* (Figure 13, Plate 33–36, Table 7)

9.1. the form of the *margo proximalis*:

– A. strongly bulging: *Acrocephalus*; *Aegithalos*; *Anthus*; *Calandrella*; *Carduelis*; *Certhia*; *Cettia*; *Coccothraustes*;

Eremophilla; Erithacus; Lanius; Loxia; Lullula; Motacilla; Muscicapa; Parus; Phylloscopus; Prunella; Sylvia;

- B. weakly bulging: *Alauda; Bombycilla; Chloris; Delichon; Emberiza; Fringilla; Galerida; Hippolais; Hirundo; Monticola; Oenanthe; Oriolus; Phoenicurus; Pinicola; Pyrrhula; Regulus; Riparia; Saxicola; Serinus; Sitta; Sturnus; Turdus;*
- C. concave: *Locustella; Luscinia; Troglodytes;*
- D. wavy: *Cinclus; Luscinia;*
- E. flattened: *Passer; Plectrophenax;*

9.2. the form of the *tuberculum ventralis*:

- A. rounded: *Alauda; Anthus; Certhia; Eremophilla; Erithacus; Fringilla; Hippolais; Lanius; Locustella; Loxia; Luscinia; Motacilla; Muscicapa; Parus; Phoenicurus; Phylloscopus; Pyrrhula; Regulus; Serinus; Sitta; Sturnus; Troglodytes; Turdus;*
- B. flattened: *Emberiza; Lullula; Plectrophenax;*
- C. upwards protruding: *Acrocephalus; Aegithalos; Bombycilla; Carduelis; Cettia; Chloris; Cinclus; Coccothraustes; Delichon; Galerida; Hirundo; Luscinia; Monticola; Oriolus; Passer; Prunella; Riparia; Sylvia;*
- D. conical: *Calandrella; Oenanthe; Pinicola; Saxicola;*

9.3. the form of the *tuberculum dorsalis*:

- A. conical: *Acrocephalus; Aegithalos; Cettia; Cinclus; Chloris; Coccothraustes; Emberiza; Eremophilla; Erithacus; Hippolais; Locustella; Loxia; Luscinia; Monticola; Muscicapa; Oenanthe; Oriolus; Parus; Passer; Phoenicurus; Pyrrhula; Regulus; Saxicola; Sitta; Troglodytes; Turdus;*
- B. hook shaped: *Calandrella; Lanius; Lullula; Phylloscopus; Sturnus; Sylvia;*

– C. flattened: *Alauda; Galerida; Prunella; Serinus;*

– D. rounded: *Anthus; Bombycilla; Carduelis; Certhia; Delichon; Fringilla; Hirundo; Luscinia; Motacilla; Plectrophenax; Pinicola; Riparia;*

9.4. the character of the *margo dorsalis*:

- A. rounded: *Eremophilla; Galerida; Hippolais; Lullula; Monticola; Oriolus; Pyrrhula;*
- B. straight: *Anthus; Lanius; Loxia; Muscicapa; Phylloscopus; Pinicola; Prunella; Sitta; Troglodytes;*
- C. wavy: *Acrocephalus; Aegithalos; Alauda; Bombycilla; Calandrella; Carduelis; Certhia; Cettia; Chloris; Cinclus; Coccothraustes; Delichon; Emberiza; Erithacus; Fringilla; Hirundo; Locustella; Luscinia; Luscinia; Motacilla; Oenanthe; Parus; Passer; Phoenicurus; Plectrophenax; Regulus; Riparia; Saxicola; Serinus; Sturnus; Sylvia; Turdus;*

9.5. the character of the *margo distalis*:

- A. rounded: *Acrocephalus; Aegithalos; Alauda; Calandrella; Carduelis; Certhia; Cinclus; Eremophilla; Galerida; Locustella; Loxia; Lullula; Luscinia; Motacilla; Oenanthe; Oriolus; Passer; Phoenicurus; Prunella; Pyrrhula; Saxicola; Sturnus; Sylvia;*
- B. flattened: *Chloris; Emberiza; Hippolais; Lanius; Monticola; Pinicola; Regulus;*
- C. wavy: *Anthus; Bombycilla; Cettia; Coccothraustes; Delichon; Erithacus; Fringilla; Hirundo; Luscinia; Muscicapa; Parus; Phylloscopus; Plectrophenax; Riparia; Serinus; Sitta; Troglodytes; Turdus;*

Alaudidae: *Alauda* BACCA; *Calandrella* ADBCA; *Eremophila* AAAAA; *Galerida* BCCAA; *Lullula* ABBA;

Hirundinidae: *Delichon* BCDCC; *Hirundo* BCDCC; *Riparia* BCDCC;

Paridae: *Aegithalos* ACACA; *Parus* AAACC;

Certhiidae: *Certhia* AADCA;

Sittidae: *Sitta* BAABC;

Muscicapidae: *Erithacus* AAACC; *Luscinia* DADCC; *Monticola* BCAAB; *Muscicapa* AAABC; *Oenanthe* BDACA; *Phoenicurus* BAACA; *Saxicola* BDACA;

Turdidae: *Turdus* BAACC;

Oriolidae: *Oriolus* BCAA;

Sylviidae: *Acrocephalus* ACACA; *Cettia* ACACC; *Hippolais* BAAAB; *Locustella* CAACA; *Luscinola* CCACA; *Phylloscopus* AABBC; *Regulus* BAACB; *Sylvia* ACBCA;

Motacillidae: *Anthus* AADBC; *Motacilla* AADCA;

Bombycillidae: *Bombycilla* BCDCC;

Troglodytidae: *Troglodytes* CAABC;

Cinclidae: *Cinclus* DCACA;

Prunellidae: *Prunella* ACCBA;

Laniidae: *Lanius* AABBB;

Sturnidae: *Sturnus* BABCA;

Passeridae: *Passer* ECACA;

Fringillidae: *Carduelis* ACDCA; *Chloris* BCACB; *Coccothraustes* ACACC; *Fringilla* BADCC; *Loxia* AAABA; *Pinicola* BDDBB; *Pyrrhula* BAAAA; *Serinus* BACCC;

Emberizidae: *Emberiza* BBACB; *Plectrophenax* EBDCC;

AAAAA: *Eremophila*;

AAABA: *Loxia*;

AAABC: *Muscicapa*;

AAACC: *Erithacus*; *Parus*;

AABBB: *Lanius*;

AABBC: *Phylloscopus*;

AADCA: *Certhia*; *Motacilla*;

AADBC: *Anthus*;

ABBAA: *Lullula*;

ACACA: *Acrocephalus*; *Aegithalos*;

ACACC: *Cettia*; *Coccothraustes*;

ACBCA: *Sylvia*;

ACCBA: *Prunella*;

ACDCA: *Carduelis*;

ADBCA: *Calandrella*;

BAAAA: *Pyrrhula*;

BAAAB: *Hippolais*;

BAABC: *Sitta*;

BAACA: *Phoenicurus*;

BAACB: *Regulus*;

BAACC: *Turdus*;

BABCA: *Sturnus*;

BACCA: *Alauda*;

BACCC: *Serinus*;

BADCC: *Fringilla*;

BBACB: *Emberiza*;

BCAAA: *Oriolus*;

BCAAB: *Monticola*;

BCACB: *Chloris*;

BCCAA: *Galerida*;

BCDCC: *Bombycilla*; *Delichon*; *Hirundo*; *Riparia*;

BDACA: *Oenanthe*; *Saxicola*;

BDDBB: *Pinicola*;

CAABC: *Troglodytes*;

CAACA: *Locustella*;

CCACA: *Luscinola*;

DADCC: *Luscinia*;

DCACA: *Cinclus*;

EBDCC: *Plectrophenax*;

ECACA: *Passer*;

10. Femur (distal epiphysis) (Figure 14, Plate 37–40, Table 8)

10.1. the shape of the condylus medialis:

– A. semicircle: *Aegithalos*; *Bombycilla*; *Calandrella*; *Carduelis*; *Certhia*; *Cettia*; *Cinclus*; *Coccothraustes*; *Delichon*; *Erithacus*; *Galerida*; *Hippolais*; *Hirundo*; *Locustella*; *Loxia*; *Lullula*; *Monticola*; *Motacilla*; *Oriolus*; *Parus*; *Passer*;

Phoenicurus; Phylloscopus; Pinicola; Regulus; Sitta; Sturnus; Troglodytes

- B. blunt cone: *Alauda; Anthus; Chloris; Emberiza; Eremophila; Fringilla; Lanius; Luscinia; Luscinola; Oenanthe; Plectrophenax; Prunella; Pyrrhula; Remiz; Riparia; Saxicola; Serinus; Sylvia; Turdus;*
- C. asymmetrically: *Acrocephalus;*

10.2. the character of the *sulcus intercondylaris*:

- A. deeply concave: *Acrocephalus; Aegithalos; Alauda; Calandrella; Carduelis; Cettia; Chloris; Cinclus; Eremophila; Erithacus; Fringilla; Lanius; Locustella; Lullula; Monticola; Motacilla; Oenanthe; Oriolus; Phoenicurus; Phylloscopus; Pinicola; Pyrrhula; Saxicola; Sturnus; Troglodytes;*
- B. weakly concave: *Certhia; Delichon; Emberiza; Galerida; Hippolais; Hirundo; Loxia; Luscinola; Parus; Prunella; Regulus; Remiz; Serinus; Sylvia;*
- C. asymmetrically concave: *Anthus; Luscinia; Passer; Riparia;*
- D. flattened: *Coccothraustes; Plectrophenax; Sitta; Turdus;*
- E. wavy: *Bombycilla;*

10.3. the shape of the *condylus lateralis*:

- A. broadly rounded: *Acrocephalus; Anthus; Certhia; Cettia; Chloris; Eremophila; Delichon; Galerida; Hippolais; Hirundo; Oenanthe; Oriolus; Passer; Phylloscopus; Prunella; Pyrrhula; Remiz; Sturnus; Sylvia; Turdus;*
- B. rounded: *Aegithalos; Alauda; Bombycilla; Carduelis; Cinclus; Coccothraustes; Erithacus; Lanius; Loxia; Lullula; Luscinia; Monticola; Motacilla; Parus; Phoenicurus; Pinicola; Regulus; Serinus; Sitta; Troglodytes;*

- C. conical: *Calandrella; Emberiza; Fringilla; Locustella; Luscinola; Plectrophenax; Riparia; Saxicola;*

10.4. the form of the *epicondylus medialis*:

- A. pointedly protruding: *Acrocephalus; Calandrella; Coccothraustes; Delichon; Fringilla; Hippolais; Parus; Phylloscopus; Pinicola; Serinus; Sturnus;*
- B. rounded protruding: *Cettia; Emberiza; Eremophila; Erithacus; Galerida; Locustella; Luscinia; Monticola; Passer; Pyrrhula; Regulus; Saxicola; Troglodytes;*
- C. bulging: *Aegithalos; Alauda; Anthus; Bombycilla; Carduelis; Certhia; Cinclus; Loxia; Lullula; Motacilla; Oriolus; Phoenicurus; Plectrophenax; Remiz; Sitta;*
- D. not arching: *Chloris; Hirundo; Lanius; Luscinola; Oenanthe; Prunella; Riparia; Sylvia; Turdus;*

10.5. the form of the *epicondylus lateralis*:

- A. conical protruding: *Acrocephalus; Emberiza; Fringilla; Passer;*
- B. rounded protruding: *Alauda; Calandrella; Carduelis; Loxia; Lullula; Parus; Phylloscopus; Pinicola; Plectrophenax; Prunella; Pyrrhula; Serinus;*
- C. bulging: *Aegithalos; Anthus; Bombycilla; Chloris; Cinclus; Coccothraustes; Delichon; Eremophila; Erithacus; Hippolais; Hirundo; Lanius; Locustella; Loxia; Luscinia; Luscinola; Monticola; Motacilla; Oenanthe; Regulus; Remiz; Riparia; Sylvia; Sitta; Sturnus; Troglodytes; Turdus;*
- D. not arching: *Certhia; Cettia; Galerida; Oriolus; Phoenicurus; Saxicola;*

Alaudidae: *Alauda* BABCB; *Calandrella* AACAB; *Eremophila* BAABC; *Galerida* ABABD; *Lullula* AABCB;

Hirundinidae: *Delichon* ABAAC; *Hirundo* ADADC; *Riparia* BCCDC;

Paridae: *Aegithalos* AABCC; *Parus* ABBAB; *Remiz* BBACC;

Certhiidae: *Certhia* ABACD;

Sittidae: *Sitta* ADBCC;

Muscicapidae: *Erithacus* AABBC; *Luscinia* DABBC; *Monticola* ACBBC; *Oenanthe* BAADC; *Phoenicurus* AABCD; *Saxicola* BBABD;

Turdidae: *Turdus* BDADC;

Oriolidae: *Oriolus* AAACD;

Sylviidae: *Acrocephalus* CAAAA; *Cettia* AAABD; *Hippolais* ABAAC; *Locustella* AACBC; *Luscinola* BBCDC; *Phylloscopus* AAAAB; *Regulus* ABBBC; *Sylvia* ACBDC;

Motacillidae: *Anthus* BCACC; *Motacilla* AABCC;

Bombycillidae: *Bombycilla* AEBCC;

Troglodytidae: *Troglodytes* AABBC;

Cinclidae: *Cinclus* AABCC;

Prunellidae: *Prunella* BBADB;

Laniidae: *Lanius* BABDC;

Sturnidae: *Sturnus* AAAAC;

Passeridae: *Passer* ACABA;

Fringillidae: *Carduelis* AABCB; *Chloris* BAADC; *Coccothraustes* ADBAC; *Fringilla* BACAA; *Loxia* ABBCC; *Pinicola* AABAB; *Pyrrhula* BAABB; *Serinus* BBBAB;

Emberizidae: *Emberiza* BBCBA; *Plectrophenax* BDCCB;

AAAAB: *Phylloscopus*;

AAAAC: *Sturnus*;

AAABD: *Cettia*;

AAACD: *Oriolus*;

AABAB: *Pinicola*;

AABBC: *Erithacus*; *Troglodytes*;

AABCB: *Carduelis*; *Lullula*;

AABCC: *Aegithalos*; *Cinclus*; *Motacilla*;

AABCD: *Phoenicurus*;

AACAB: *Calandrella*;

AACBC: *Locustella*;

ABAAC: *Delichon*; *Hippolais*;

ABABD: *Galerida*;

ABACD: *Certhia*;

ABBAB: *Parus*;

ABBCC: *Loxia*;

ABBDC: *Regulus*;

ACABA: *Passer*;

ACBBC: *Monticola*;

ACBDC: *Sylvia*;

ADADC: *Hirundo*;

ADBAC: *Coccothraustes*;

ADBCC: *Sitta*;

AEBCC: *Bombycilla*;

BAABB: *Pyrrhula*;

BAABC: *Eremophila*;

BAADC: *Chloris*; *Oenanthe*;

BACAA: *Fringilla*;

BABCB: *Alauda*;

BABCC: *Remiz*;

BABDC: *Lanius*;

BBABD: *Prunella*; *Saxicola*;

BBBAB: *Serinus*;

BBCBA: *Emberiza*;

BBCDC: *Luscinola*;

BCACC: *Anthus*;

BCCDC: *Riparia*;

BDADC: *Turdus*;

BDCCB: *Plectrophenax*;

CAAAA: *Acrocephalus*;

DABBC: *Luscinia*;

11. *Tibiotarsus* (distal epiphysis) (Figure 15, Plate 41–44, Table 9)

11.1. the shape of the *epicondylus medialis*:

- A. blunt cone: *Alauda*; *Acrocephalus*; *Aegithalos*; *Bombycilla*; *Calandrella*; *Certhia*; *Coccothraustes*; *Emberiza*; *Eremophila*; *Erithacus*; *Fringilla*; *Hippolais*; *Lanius*; *Loxia*; *Luscinia*; *Monticola*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Parus*; *Passer*; *Phoenicurus*; *Pinicola*; *Plectrophenax*; *Pyrrhula*; *Remiz*; *Saxicola*; *Serinus*; *Sitta*; *Sturnus*; *Troglodytes*; *Turdus*;

- B. conical: *Cinclus*; *Locustella*; *Luscinio-*
la; *Prunella*;
- C. rounded: *Anthus*; *Carduelis*; *Delichon*;
Galerida; *Hirundo*; *Lullula*; *Melanoco-*
rypha; *Phylloscopus*; *Regulus*; *Riparia*;
Sylvia;

11.2. the shape of the *epicondylus lateralis*:

- A. rounded: *Alauda*; *Cinclus*; *Erithacus*;
Hirundo; *Lullula*; *Luscinia*; *Monticola*;
Parus; *Phylloscopus*; *Riparia*; *Saxicola*;
Sturnus; *Troglodytes*;
- B. blunt cone: *Aegithalos*; *Bombycilla*;
Calandrella; *Carduelis*; *Coccothraustes*;
Delichon; *Eremophila*; *Fringilla*; *Gale-*
rida; *Hippolais*; *Lanius*; *Loxia*; *Luscini-*
ola; *Motacilla*; *Muscicapa*; *Oriolus*; *Passer*;
Phoenicurus; *Pinicola*; *Prunella*;
Pyrrhula; *Regulus*; *Remiz*; *Serinus*; *Sitta*;
Sylvia; *Turdus*;
- C. conical: *Acrocephalus*; *Anthus*; *Ember-*
iza; *Locustella*; *Melanocorypha*; *Oenan-*
the; *Plectrophenax*;
- D. hook shape: *Certhia*;

11.3. the form of the *incisura intercondylaris*:

- A. wavy: *Acrocephalus*; *Aegithalos*; *Coc-*
cothraustes; *Delichon*; *Fringilla*; *Hippo-*
lais; *Lanius*; *Loxia*; *Lusciniola*; *Motacil-*
la; *Muscicapa*; *Oriolus*; *Parus*; *Passer*;
Pinicola; *Pyrrhula*; *Regulus*; *Remiz*; *Se-*
rinus; *Sitta*; *Sturnus*; *Sylvia*; *Troglodytes*;
- B. deeply arched: *Alauda*; *Bombycilla*;
Calandrella; *Carduelis*; *Eremophila*; *Ga-*
lerida; *Melanocorypha*;
- C. asymmetrically arched: *Phoenicurus*;
Prunella; *Turdus*; *Locustella*; *Phyllosco-*
pus; *Riparia*;
- D. asymmetrically wavy: *Anthus*; *Cer-*
thia; *Emberiza*; *Erithacus*; *Lullula*; *Lus-*
cinia; *Monticola*; *Oenanthe*; *Plectrophe-*
nax; *Saxicola*;
- E. flattened: *Cinclus*; *Hirundo*;

11.4. the character of the *tuberositas retinaculi*:

- A. below pointly protruding: *Acrocephalus*;
Anthus; *Locustella*; *Melanocorypha*;
Motacilla; *Phylloscopus*; *Sylvia*;
- B. below rounded protruding: *Certhia*;
Cinclus; *Erithacus*; *Galerida*; *Hippola-*
is; *Loxia*; *Luscinia*; *Lusciniola*; *Montico-*
la; *Oenanthe*; *Plectrophenax*; *Prunella*;
Pyrrhula; *Remiz*; *Sitta*;
- C. below weakly rounded: *Alauda*; *Ca-*
landrella; *Delichon*; *Fringilla*; *Passer*;
Pinicola; *Serinus*;
- D. high pointly protruding: *Emberiza*;
Lullula; *Saxicola*; *Turdus*;
- E. high rounded protruding: *Aegithalos*;
Bombycilla; *Carduelis*; *Coccothraustes*;
Eremophila; *Lanius*; *Muscicapa*; *Parus*;
Phoenicurus; *Regulus*; *Remiz*; *Riparia*;
Sturnus; *Troglodytes*;
- F. miss: *Hirundo*; *Oriolus*;

Alaudidae: *Alauda* AABC; *Calandrella* ABBC; *Eremophila* ABBE; *Galerida* CBBB; *Lullula* CADD; *Melanocorypha* CCBA;

Hirundinidae: *Delichon* CBAC; *Hirundo* CAEF; *Riparia* CACE;

Paridae: *Aegithalos* ABAB; *Parus* AAAE; *Remiz* ABAB;

Certhiidae: *Certhia* AADB;

Sittidae: *Sitta* ABAB;

Muscicapidae: *Erithacus* AADB; *Luscinia* AADB; *Monticola* AADB; *Muscicapa* ABAB; *Oenanthe* AADB; *Phoenicurus* ABCE; *Saxicola* AADD;

Turdidae: *Turdus* ABCD;

Oriolidae: *Oriolus* ABAB;

Sylviidae: *Acrocephalus* ACAA; *Hippolais* ABAB; *Locustella* BCCA; *Lusciniola* BBAB; *Phylloscopus* CACA; *Regulus* CBAE; *Sylvia* CBAA;

Motacillidae: *Anthus* CCDA; *Motacilla* ABAA;

Bombycillidae: *Bombycilla* ABBE;
Troglodytidae: *Troglodytes* AAAE;
Cinclidae: *Cinclus* BAEB;
Prunellidae: *Prunella* BBCB;
Laniidae: *Lanius* ABAE;
Sturnidae: *Sturnus* AAAE;
Passeridae: *Passer* BBAC;
Fringillidae: *Carduelis* CBBE; *Coccothraustes* ABAE; *Fringilla* ABAC; *Loxia* ABAB; *Pinicola* ABAC; *Pyrrhula* ABAB; *Serinus* ABAC;
Emberizidae: *Emberiza* ACDD; *Plectrophenax* ACDB;

AAAE: *Parus*; *Sturnus*; *Troglodytes*;
AABC: *Alauda*;
AADB: *Erithacus*; *Luscinia*; *Monticola*; *Oenanthe*;
AADD: *Saxicola*;
ABAA: *Motacilla*;
ABAB: *Hippolais*; *Loxia*; *Pyrrhula*; *Sitta*;
ABAC: *Fringilla*; *Pinicola*; *Serinus*;
ABAE: *Aegithalos*; *Coccothraustes*; *Lanius*; *Muscicapa*; *Remiz*;
ABAF: *Oriolus*;
ABBC: *Calandrella*;
ABBE: *Bombycilla*; *Eremophila*;
ABCD: *Turdus*;
ABCE: *Phoenicurus*;
ACAA: *Acrocephalus*;
ACDB: *Plectrophenax*;
ACDD: *Emberiza*;
ADDB: *Certhia*;
BAEB: *Cinclus*;
BBAC: *Passer*;
BBAB: *Luscinia*;
BBCB: *Prunella*;
BCCA: *Locustella*;
CACA: *Phylloscopus*;
CACE: *Riparia*;
CADD: *Lullula*;
CAEF: *Hirundo*;
CBAA: *Sylvia*;

CBAC: *Delichon*;
CBAE: *Regulus*;
CBBA: *Melanocorypha*;
CBBB: *Galerida*;
CBBE: *Carduelis*;
CCDA: *Anthus*;

12. *Tarsometatarsus* (distal epiphysis) (Figure 16, Plate 45–48, Table 10)

12.1. the character of the *margo medialis*:

- A. straight: *Anthus*; *Calandrella*; *Delichon*; *Emberiza*; *Erithacus*; *Hippolais*; *Hirundo*; *Lanius*; *Loxia*; *Luscinia*; *Monticola*; *Motacilla*; *Oenanthe*; *Oriolus*; *Passer*; *Pinicola*; *Prunella*; *Regulus*; *Saxicola*;
- B. wavy: *Alauda*; *Bombycilla*; *Carduelis*; *Cettia*; *Chloris*; *Coccothraustes*; *Eremophila*; *Fringilla*; *Galerida*; *Locustella*; *Lullula*; *Luscinia*; *Melanocorypha*; *Muscicapa*; *Phoenicurus*; *Plectrophenax*; *Pyrrhula*; *Remiz*; *Riparia*; *Sylvia*; *Troglodytes*; *Turdus*;
- C. bulging: *Certhia*; *Sitta*;
- D. concave: *Acrocephalus*; *Aegithalos*; *Parus*; *Phylloscopus*; *Sturnus*;

12.2. the shape of the *troclea metatarsi* II.:

- A. with cut-off end: *Anthus*; *Carduelis*; *Chloris*; *Coccothraustes*; *Delichon*; *Fringilla*; *Galerida*; *Hirundo*; *Lullula*; *Melanocorypha*; *Monticola*; *Motacilla*; *Passer*; *Phoenicurus*; *Plectrophenax*; *Prunella*; *Riparia*; *Sturnus*; *Turdus*;
- B. with rounded end: *Acrocephalus*; *Aegithalos*; *Alauda*; *Bombycilla*; *Calandrella*; *Emberiza*; *Eremophila*; *Luscinia*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Regulus*; *Remiz*; *Saxicola*; *Sitta*; *Troglodytes*;
- C. asymmetrically: *Certhia*; *Cettia*; *Locustella*; *Loxia*; *Luscinia*; *Parus*; *Phylloscopus*; *Pyrrhula*;

- D. conical: *Erithacus*; *Hippolais*; *Lanius*; *Pinicola*; *Sylvia*;

12.3. the shape of the *trochlea metatarsi* III.:

- A. weakly concave: *Aegithalos*; *Alauda*; *Anthus*; *Emberiza*; *Eremophila*; *Fringilla*; *Hippolais*; *Hirundo*; *Lanius*; *Locustella*; *Luscinia*; *Motacilla*; *Oriolus*; *Pinicola*; *Plectrophenax*; *Prunella*; *Pyrrhula*; *Sylvia*;
- B. concave: *Acrocephalus*; *Bombycilla*; *Calandrella*; *Carduelis*; *Cettia*; *Chloris*; *Coccothraustes*; *Delichon*; *Erithacus*; *Galerida*; *Loxia*; *Lullula*; *Luscinia*; *Melanocorypha*; *Monticola*; *Muscicapa*; *Oenanthe*; *Parus*; *Passer*; *Phoenicurus*; *Phylloscopus*; *Regulus*; *Remiz*; *Riparia*; *Saxicola*; *Sitta*; *Sturnus*; *Troglodytes*; *Turdus*;
- C. strongly concave: *Certhia*;

12.4. the shape of the *trochlea metatarsi* IV.:

- A. conical: *Cettia*; *Chloris*; *Eremophila*; *Melanocorypha*; *Monticola*; *Motacilla*; *Muscicapa*; *Phoenicurus*; *Prunella*; *Sturnus*; *Turdus*;
- B. rounded blunt cone: *Alauda*; *Bombycilla*; *Carduelis*; *Certhia*; *Delichon*; *Erithacus*; *Fringilla*; *Hirundo*; *Locustella*; *Oenanthe*; *Parus*; *Passer*; *Phylloscopus*; *Pinicola*; *Plectrophenax*; *Pyrrhula*; *Remiz*; *Remiz*; *Riparia*; *Saxicola*; *Sylvia*; *Troglodytes*;
- C. cut-off: *Acrocephalus*; *Aegithalos*; *Calandrella*; *Coccothraustes*; *Emberiza*; *Lanius*; *Loxia*; *Lullula*; *Luscinia*; *Luscinia*; *Regulus*;
- D. asymmetrically: *Anthus*; *Hippolais*; *Galerida*; *Oriolus*; *Sitta*;

12.5. the form of the *incisura intertrochlearis medialis*:

- A. narrow: *Aegithalos*; *Alauda*; *Calandrella*; *Carduelis*; *Coccothraustes*; *Delichon*; *Emberiza*; *Eremophila*; *Fringilla*;

Hirundo; *Lanius*; *Locustella*; *Loxia*; *Luscinia*; *Monticola*; *Oenanthe*; *Oriolus*; *Parus*; *Passer*; *Pinicola*; *Prunella*; *Riparia*; *Sitta*; *Sturnus*; *Sylvia*; *Troglodytes*;

- B. wide: *Acrocephalus*; *Anthus*; *Bombycilla*; *Certhia*; *Cettia*; *Chloris*; *Erithacus*; *Galerida*; *Hippolais*; *Lullula*; *Luscinia*; *Melanocorypha*; *Motacilla*; *Muscicapa*; *Phoenicurus*; *Phylloscopus*; *Plectrophenax*; *Pyrrhula*; *Regulus*; *Remiz*; *Saxicola*; *Turdus*;

12.6. the form of the *incisura intertrochlearis lateralis*:

- A. narrow: *Aegithalos*; *Alauda*; *Calandrella*; *Carduelis*; *Chloris*; *Coccothraustes*; *Delichon*; *Fringilla*; *Hirundo*; *Lullula*; *Locustella*; *Luscinia*; *Luscinia*; *Parus*; *Passer*; *Phylloscopus*; *Regulus*; *Riparia*; *Sitta*; *Sylvia*; *Troglodytes*;
- B. wide: *Acrocephalus*; *Anthus*; *Bombycilla*; *Certhia*; *Cettia*; *Emberiza*; *Eremophila*; *Erithacus*; *Galerida*; *Hippolais*; *Lanius*; *Loxia*; *Melanocorypha*; *Monticola*; *Motacilla*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Phoenicurus*; *Pinicola*; *Plectrophenax*; *Prunella*; *Pyrrhula*; *Remiz*; *Saxicola*; *Sturnus*; *Turdus*;

Alaudidae: *Alauda* BBABAA; *Calandrella* ABBCAA; *Eremophila* BBAAAB; *Galerida* BABDBB; *Lullula* BABBBA; *Melanocorypha* BABABB;

Hirundinidae: *Delichon* AABBA; *Hirundo* AAABAA; *Riparia* BABBAA;

Paridae: *Aegithalos* DBACAA; *Parus* DCBBAA; *Remiz* BBBB; *Remiz* BBBB;

Certhiidae: *Certhia* CCCBBB;

Sittidae: *Sitta* CBBDA;

Muscicapidae: *Erithacus* ADBBAB; *Luscinia* ACBCBA; *Monticola* AABAAB; *Muscicapa* BBBABB; *Oenanthe* ABBBAB; *Phoenicurus* BBBABB; *Saxicola* ABBBBB;

Turdidae: *Turdus* BABABB;
Oriolidae: *Oriolus* ABADAB;
Sylviidae: *Acrocephalus* DBBCBB; *Cettia* BCBABB; *Hippolais* ACADBB; *Locustella* BCABAA; *Luscinola* BBACAA; *Phylloscopus* DCBBBA; *Regulus* ABBCBA; *Sylvia* BDABAA;
Motacillidae: *Anthus* ABADBB; *Motacilla* ABAABB;
Bombycillidae: *Bombycilla* BBBBBB;
Troglodytidae: *Troglodytes* BBBBAA;
Prunellidae: *Prunella* AAAAAB;
Laniidae: *Lanius* ABACBB;
Sturnidae: *Sturnus* DABAAB;
Passeridae: *Passer* ADBBAA;
Fringillidae: *Carduelis* BABBAA; *Chloris* BABABA; *Coccothraustes* BABCAA; *Fringilla* BAABAA; *Loxia* ACBCBB; *Pinicola* ABABAB; *Pyrrhula* BCABBB;
Emberizidae: *Emberiza* ABACBB; *Plectrophenax* BAABBB;

AAAAAB: *Prunella*;
AAABAA: *Hirundo*;
AABAAB: *Monticola*;
AABBAA: *Delichon*;
ABAABB: *Motacilla*;
ABACBB: *Emberiza*; *Lanius*;
ABADAB: *Oriolus*;
ABADBB: *Anthus*;
ABBBAB: *Oenanthe*;
ABBBBB: *Saxicola*;
ABBCAA: *Calandrella*;
ABBCBA: *Regulus*;
ACADBB: *Hippolais*;
ACBCBA: *Luscinia*;
ACBCBB: *Loxia*;
ADABAB: *Pinicola*;
ADBBAA: *Passer*;
ADBBAB: *Erithacus*;
BAABAA: *Carduelis*; *Fringilla*;
BAABBB: *Plectrophenax*;
BABABA: *Chloris*;

BABABB: *Melanocorypha*; *Turdus*;
BABBAA: *Carduelis*; *Riparia*;
BABBBB: *Lullula*;
BABCAA: *Coccothraustes*;
BABDBB: *Galerida*;
BBAAAB: *Eremophila*;
BBABAA: *Alauda*;
BBACAA: *Luscinola*;
BBBABB: *Muscicapa*; *Phoenicurus*;
BBBBAA: *Troglodytes*;
BBBBBB: *Bombycilla*; *Remiz*;
BCABAA: *Locustella*;
BCABBB: *Pyrrhula*;
BCBABB: *Cettia*;
BDABAA: *Sylvia*;
CBBDA: *Sitta*;
CCCB BB: *Certhia*;
DABAAB: *Sturnus*;
DBACAA: *Aegithalos*;
DBBCBB: *Acrocephalus*;
DCBBAA: *Parus*;
DCBBBA: *Phylloscopus*;

13. *Phalanx ungularis* (Figure 17, Plate 49–52, Table 11)

13.1. the direction and the form of the *tuberculum extensorium*:

- A. straight and pointed: *Anthus*; *Coccothraustes*; *Monticola*; *Passer*; *Prunella*; *Pyrrhula*; *Riparia*; *Sturnus*; *Turdus*;
- B. straight and blunt: *Aegithalos*; *Acrocephalus*; *Emberiza*; *Eremophila*; *Oriolus*; *Phoenicurus*; *Phylloscopus*; *Pinicola*; *Regulus*; *Saxicola*; *Serinus*;
- C. dorsal rises and pointed: *Certhia*; *Fringilla*; *Galerida*; *Muscicapa*; *Sitta*;
- D. dorsal rises and blunted: *Alauda*; *Hippolais*; *Hirundo*; *Luscinia*; *Oenanthe*; *Remiz*;
- E. ventral available: *Bombycilla*; *Lanius*; *Loxia*;

13.2. the character of the *cotyla articularis*:

- A. weakly concave: *Acrocephalus*; *Aegithalos*; *Alauda*; *Bombycilla*; *Coccothraustes*; *Emberiza*; *Fringilla*; *Hippolais*; *Lanius*; *Luscinia*; *Monticola*; *Muscicapa*; *Oenanthe*; *Oriolus*; *Phoenicurus*; *Phylloscopus*; *Pinicola*; *Pyrrhula*; *Remiz*; *Riparia*; *Saxicola*; *Serinus*; *Sitta*; *Sturnus*; *Turdus*;
- B. strongly concave: *Anthus*; *Certhia*; *Eremophila*; *Galerida*; *Hirundo*; *Loxia*; *Passer*; *Prunella*; *Regulus*;

13.3. the shape of the *tuberculum flexorium*:

- A. flattened: *Acrocephalus*; *Anthus*; *Bombycilla*; *Hirundo*; *Loxia*; *Monticola*; *Riparia*; *Serinus*; *Sturnus*;
- B. concave: *Aegithalos*; *Emberiza*; *Fringilla*; *Muscicapa*; *Oenanthe*; *Phoenicurus*; *Prunella*; *Pyrrhula*; *Remiz*; *Saxicola*;
- C. pointedly protruding: *Eremophila*; *Oriolus*;
- D. dully protruding: *Alauda*; *Certhia*; *Coccothraustes*; *Galerida*; *Luscinia*; *Passer*; *Pinicola*; *Sitta*; *Turdus*;
- E. wavy: *Hippolais*; *Lanius*; *Phylloscopus*; *Regulus*;

13.4. the elbow of the *margo plantaris*:

- A. weakly arched: *Alauda*; *Eremophila*; *Galerida*; *Loxia*; *Pinicola*; *Prunella*;
- B. symmetrically strongly arched: *Acrocephalus*; *Aegithalos*; *Bombycilla*; *Certhia*; *Emberiza*; *Hippolais*; *Hirundo*; *Luscinia*; *Monticola*; *Muscicapa*; *Oenanthe*; *Phoenicurus*; *Phylloscopus*; *Pyrrhula*; *Remiz*; *Saxicola*; *Serinus*; *Sitta*;
- C. asymmetrically strongly arched: *Anthus*; *Coccothraustes*; *Fringilla*; *Lanius*; *Oriolus*; *Passer*; *Regulus*; *Riparia*; *Sturnus*; *Turdus*;

13.5. the form of the *apex*:

- A. narrow: *Certhia*; *Coccothraustes*; *Emberiza*; *Fringilla*; *Hirundo*; *Muscicapa*; *Oenanthe*; *Passer*; *Phoenicurus*; *Phylloscopus*; *Riparia*; *Saxicola*; *Sitta*; *Turdus*;
- B. stout: *Acrocephalus*; *Aegithalos*; *Alauda*; *Anthus*; *Bombycilla*; *Eremophila*; *Galerida*; *Hippolais*; *Lanius*; *Loxia*; *Luscinia*; *Monticola*; *Oriolus*; *Pinicola*; *Prunella*; *Pyrrhula*; *Regulus*; *Remiz*; *Serinus*; *Sturnus*;

Alaudidae: *Alauda* DADAB; *Eremophila* BBCAB; *Galerida* CBDAB;

Hirundinidae: *Hirundo* DBABA; *Riparia* AAACA;

Paridae: *Aegithalos* BABBB; *Remiz* DABBB;

Certhiidae: *Certhia* CBDBA;

Sittidae: *Sitta* CADBA;

Muscicapidae: *Luscinia* DADBB; *Monticola* AAABB; *Muscicapa* CABBA; *Oenanthe* DABBA; *Phoenicurus* BABBA; *Saxicola* BABBA;

Turdidae: *Turdus* AADCA;

Oriolidae: *Oriolus* BACCB;

Sylviidae: *Acrocephalus* BAABB; *Hippolais* DAEBB; *Phylloscopus* BAEBB; *Regulus* BBECB;

Motacillidae: *Anthus* ABACB;

Bombycillidae: *Bombycilla* EAABB;

Prunellidae: *Prunella* ABBAB;

Laniidae: *Lanius* EAECB;

Sturnidae: *Sturnus* AAACB;

Passeridae: *Passer* ABDCA;

Fringillidae: *Coccothraustes* AADCA; *Fringilla* CABCA; *Loxia* EBAAB; *Pinicola* BADAB; *Pyrrhula* AABBB; *Serinus* BAABB;

Emberizidae: *Emberiza* BABBA;

AAABB: *Pyrrhula*;
AAACB: *Sturnus*;
AAACA: *Riparia*;
AAABB: *Monticola*;
AADCA: *Coccothraustes*; *Turdus*;
ABACB: *Anthus*;
ABBAB: *Prunella*;
ABDCA: *Passer*;
BAABB: *Acrocephalus*; *Serinus*;
BABBA: *Emberiza*; *Phoenicurus*; *Saxicola*;
BABBB: *Aegithalos*;
BACCB: *Oriolus*;
BAEBA: *Phylloscopus*;
BBCAB: *Eremophila*;
BADAB: *Pinicola*;
BBECB: *Regulus*;
CABBA: *Muscicapa*;
CABCA: *Fringilla*;
CADBA: *Sitta*;
CBDAB: *Galerida*;
CBDDBA: *Certhia*;

DABBA: *Oenanthe*;
DABBB: *Remiz*;
DADAB: *Alauda*;
DADBB: *Luscinia*;
DAEBB: *Hippolais*;
DBABA: *Hirundo*;
EAABB: *Bombycilla*;
EAECB: *Lanius*;
EBAAB: *Loxia*;

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Measurement methods of bones

Figure 2 Measurement methods of bones I.
2. ábra A csontok mérési módja

Measurement methods of bones II.

F. carpometacarpus G. phalanx prox.dig.maj.

H. femur (dist)

I. tibiotarsus (dist) j. tarsometatarsus (dist)

K. phalanx ungularis

Figure 3 Measurement methods of bones II.
3. ábra A csontok mérési módja

Mandibula

a. the end of the beak:

b. the slot of the beak:

c. the stem of the beak:

Figure 4 Mandibula coding sample (a – the end of the beak; b – the slot of the beak; c – the stem of the beak)

4. ábra Alsó állkapocs kódolási minta (a – a csőr vége; b – a csőr bemélyedése; c – a csőr szára)

Coracoideum

a. the shape of the processus acrocoracoidalis:

b. the shape of the acrocoracoideum:

c. the form of the sulcus musculus supracoracoidalis:

d. the existence of the processus procoracoidalis:

Figure 5 Coracoideum coding sample (a – the shape of the *processus acrocoracoidalis*; b – the shape of the *acrocoracoideum*; c – the form of the *sulcus musculus supracoracoidei*; d – the existence of the *processus procoracoidalis*)

5. ábra Hollócsőrscsont kódolási minta (a – a *processus acrocoracoidalis* alakja; b – az *acrocoracoideum* alakja; c – a *sulcus musculus supracoracoidei* formája; d – a *processus procoracoidalis* léte)

Scapula

a. the lenght of the branches of the acromion:

b. the similarity of the braches of the acromion:

c. the shape of the apex dorsalis:

d. the shape of the apex lateralis:

e. the character of the pit between the branches:

Figure 6 *Scapula* coding sample (a – the lenght of the branches of the *acromion*; b – the similarity of the branches of the *acromion*; c – the shape of the *apex dorsalis*; d – the shape of the *apex lateralis*; e – the character of the pit between the branches)

6. ábra Lapocka kódolási minta (a – az *acromion* szárainak a hossza; b – az *acromion* szárainak a hasonlósága; c – a hátoldali nyúlvány alakja; d – az oldalsó nyúlvány alakja; e – a szárak közti mélyedés formája)

Humerus (epiph. prox.)

a. the shape of the tuberculum ventrale:

b. the form of the end of the crista bicipitalis

c. the form of the distal edge of the crista bicipitalis

d. the character of the fossa pneumotricipitalis:

Figure 7 *Humerus (epiph. prox.)* coding sample (a – the shape of the *tuberculum ventrale*; b – the form of the *crista bicipitalis*; c – the form of the distal edge of the *crista bicipitalis*; d – the character of the *fossa pneumotricipitalis*)

7. ábra Felkarcsont (prox. epifízis) kódolási minta (a – a *tuberculum ventrale* alakja; b – a *crista bicipitalis* formája; c – a *crista bicipitalis* disztális élének a formája; d – a *fossa pneumotricipitalis* jellege)

Humerus (epiph.dist.)

a. the form of the *tuberculum supracondylare ventrale*:

b. the shape of the *processus flexorius*:

c. the form of the *processus supracondylaris dorsalis*:

Figure 8 *Humerus (epiph. dist.)* coding sample (a – the form of the *tuberculum supracondylare ventrale*; b – the shape of the *processus flexorius*; c – the form of the *processus supracondylaris dorsalis*)

8. ábra Felkarcsont (diszt. epifízis) kódolási minta (a – a *tuberculum supracondylare ventrale* formája; b – a *processus flexorius* alakja; c – a *processus supracondylaris dorsalis* formája)

Ulna (epiph. prox.)

a. the shape of the oleocranon:

b. the form of the cotyla dorsalis:

c. the existence of the tuberculum ligamentum collateralis ventralis:

Figure 9 *Ulna (epiph. prox.)* coding sample (a – the shape of the *olecranon*; b – the form of the *cotyla dorsalis*; c – the existence of the *tuberculum ligamentum collateralis ventralis*)

9. ábra Singcsont (prox. epifízis) kódolási minta (a – az *olecranon* alakja; b – a *cotyla dorsalis* formája; c – a *tuberculum ligamentum collateralis ventralis* léte)

Ulna (epiph. dist.)

a. the shape of the condylus dorsalis:

b. the form of the sulcus intercondylaris:

c. the shape of the condylus ventralis:

d. the form of the tuberculum carpale:

Figure 10 Ulna (epiph. dist.) coding sample (a – the shape of the condylus dorsalis; b – the form of the sulcus intercondylaris; c – the shape of the condylus ventralis; d – the form of the tuberculum carpale)

10. ábra Singcsont (diszt. epifízis) kódolási minta (a – a condylus dorsalis alakja; b – a sulcus intercondylaris formája; c – a condylus ventralis alakja; d – a tuberculum carpale formája)

Carpometacarpus I.

a. the form of the trochlea carpalis:

b. the shape of the processus extensorius:

c. the form of the processus alularis:

Figure 11 *Carpometacarpus I.* coding sample (a – the shape of the *trochlea carpalis*; b – the form of the *processus extensorius*; c – the shape of the *processus alularis*)

11. ábra Kézközépcsont kódolási minta I. (a – a *trochlea carpalis* alakja; b – a *processus extensorius* formája; c – a *processus alularis* alakja)

Carpometacarpus II.

d. the form of the fovea subalularis:

e. the shape of the protuberantia metacarpalis:

f. the shape of the facies articularis digitalis minor:

Figure 12 *Carpometacarpus* II. coding sample (d – the form of the *fovea subalularis*; e – the character of the *protuberantia metacarpale majus*; f – the shape of the *facies articularis digitale minor*);
12. ábra Kézközépcsont kódolási minta (d – a *fovea subalularis* formája; e – a *protuberantia metacarpale majus* jellege; f – a *facies articularis digitale minor* alakja)

Phalanx proximalis digiti majoris

a. the form of the facies articularis metacarpalis:

b. the shape of the tuberculum ventralis:

c. the shape of the tuberculum dorsalis:

d. the character of the margo dorsalis:

e. the form of the facies articularis phalangealis:

Figure 13 *Phalanx proximalis digiti majoris* coding sample (a – the form of the *margo proximalis*; b – the form of the *tuberculum ventralis*; c – the form of the *tuberculum dorsalis*; d – the character of the *margo dorsalis*; e – the character of the *margo distalis*)

13. ábra Kézujjperc kódolási minta (a – a *margo proximalis* formája; b – a *tuberculum ventralis* formája; c – a *tuberculum dorsalis* formája; d – a *margo dorsalis* jellege; e – a *margo distalis* jellege)

Femur (epiphysis distalis)

a. the shape of the condylus medialis:

b. the character of the sulcus intercondylaris:

c. the shape of the condylus lateralis:

d. the form of the epicondylus medialis:

e. the form of the epicondylus lateralis:

Figure 14 Femur (epiph. dist.) coding sample (a – the shape of the *condylus medialis*; b – the character of the *sulcus intercondylaris*; c – the shape of the *condylus lateralis*; d – the form of the *epicondylus medialis*; e – the form of the *epicondylus lateralis*)

14. ábra Combcsont (diszt. epifízis) kódolási minta (a – a *condylus medialis* alakja; b – a *sulcus intercondylaris* jellege; c – a *condylus lateralis* alakja; d – az *epicondylus medialis* formája; e – az *epicondylus lateralis* formája)

Tibiotarsus (epiphysis distalis)

a. the shape of the epicondylus medialis

b. the shape of the epicondylus lateralis

c. the character of the incisura intercondylaris:

d. the form of the tuberculum retinaculi musc. fibularis:

Figure 15 *Tibiotarsus (epiph. dist.)* coding sample (a – the shape of the *epicondylus lateralis*; b – the shape of the *epicondylus medialis*; c – the form of the *incisura intercondylaris*; d – the character of the *tuberositas retinaculi*)

15. ábra Lábszárcsont (diszt. epifízis) kódolási minta (a – az *epicondylus lateralis* alakja; b – az *epicondylus medialis* alakja; c – az *incisura intercondylaris* formája; d – a *tuberositas retinaculi* jellege)

Tarsometatarsus (epiphysis distalis)

a. the character of the margo medialis:

b. the shape of the trochlea metatarsi II.:

c. the shape of the trochlea metatarsi III.:

d. the shape of the trochlea metatarsi IV.:

e. the form of the incisura intertrochlearis medialis and lateralis:

Figure 16 Tarsometatarsus (epiph. dist.) coding sample (a – the character of the margo medialis; b – the shape of the trochlea metatarsi II.; c – the shape of the trochlea metatarsi III.; d – the shape of the trochlea metatarsi IV.; e – the form of the incisura intertrochlearis medialis; f – the form of the incisura intertrochlearis lateralis)

16. ábra Csüd (diszt. epifízis) kódolási minta (a – a margo medialis jellege; b – a trochlea metatarsi II. alakja; c – a trochlea metatarsi III. alakja; d – a trochlea metatarsi IV. alakja; e – az incisura intertrochlearis medialis formája; f – az incisura intertrochlearis lateralis formája)

Phalanx ungularis

a. the character of the tuberculum extensorium:

b. the form of the cotyla articularis:

c. the character of the tuberculum flexorium:

d. the curvature of the corpus:

e. the shape of the apex:

Figure 17 *Phalanx ungularis* coding sample (a – the direction and the form of the *tuberculum extensorium*; b – the character of the *cotyla articularis*; c – the shape of the *tuberculum flexorium*; d – the elbow of the *margo plantaris*; e – the form of the *apex*)

17. ábra Karomcsont kódolási minta (a – a *tuberculum extensorium* iránya és formája; b – a *cotyla articularis* jellege; c – a *tuberculum flexorium* alakja; d – a *margo plantaris* görbülete; e – az *apex* alakja)

Family – Család	Genus – Nemzetség	No.sp	PL mm	BC mm	PB-B mm
Alaudidae	<i>Alauda</i>	1	8.01	3.59	1.31
	<i>Calandrella</i>	1	4.78	2.72	1.12
	<i>Eremophila</i>	1	6.71	3.39	1.05
	<i>Galerida</i>	1	7.29	2.91	1.21
	<i>Lullula</i>	1	6.09	3.57	0.92
	<i>Melanocorypha</i>	1	9.82	5.74	1.84
Hirundinidae	<i>Delichon</i>	1	2.69	2.99	0.95
	<i>Hirundo</i>	1	2.73	3.01	0.98
	<i>Riparia</i>	1	2.77	3.05	0.85
Paridae	<i>Aegithalos</i>	1	2.38	2.53	0.72
	<i>Panurus</i>	0			
	<i>Parus</i>	5	4.54-5.32	2.63-3.18	0.98-1.07
	<i>Remiz</i>	1	5.03	3.43	0.97
Muscicapidae	<i>Erithacus</i>	1	4.34	2.58	0.75
	<i>Luscinia</i>	3	6.03-6.09	2.43-3.24	0.78-0.83
	<i>Monticola</i>	1	9.92	3.32	1.05
	<i>Muscicapa – Ficedula</i>	1	3.96	2.97	0.82
	<i>Oenanthe</i>	1	6.22	2.61	0.89
	<i>Phoenicurus</i>	1	4.81	2.15	0.75
	<i>Saxicola</i>	1	4.23	2.64	0.78
Turdidae	<i>Turdus</i>	1	9.48	3.76	1.22
Oriolidae	<i>Oriolus</i>	1	7.22	3.19	0.96
Certhiidae	<i>Certhia</i>	1	6.43	1.38	0.62
Sittidae	<i>Sitta</i>	1	7.43	3.18	0.98
Troglodytidae	<i>Troglodytes</i>	1	4.92	1.43	0.68
Cinclidae	<i>Cinclus</i>	1	6.59	2.17	0.85
Bombycillidae	<i>Bombycilla</i>	1	5.78	4.47	1.32

Family – Család	Genus – Nemzetség	No.sp	PL mm	BC mm	PB-B mm
Motacillidae	<i>Anthus</i>	5	5.29-9.16	2.25-3.19	0.72-0.96
	<i>Motacilla</i>	3	5.52-7.86	2.61-3.04	0.75-0.91
Sylviidae	<i>Acrocephalus</i>	4	6.18-6.45	2.47-4.98	0.65-0.75
	<i>Cettia</i>	1	5.21	2.25	0.67
	<i>Hippolais</i>	1	4.42	3.71	0.83
	<i>Locustella</i>	1	6.45	2.47	0.67
	<i>Luscinola</i>	0			
	<i>Phylloscopus</i>	1	3.48	2.21	0.79
	<i>Regulus</i>	0			
	<i>Sylvia</i>	5	3.47-5.41	2.99-3.03	0.62-0.71
Prunellidae	<i>Prunella</i>	2	5.42	2.98	0.78
Laniidae	<i>Lanius</i>	1	7.98	5.18	2.14
Sturnidae	<i>Sturnus – Pastor</i>	2	0.21	3.94	1.58
Passeridae	<i>Passer</i>	2	5.81-6.11	4.71-5.47	1.21-1.26
Fringillidae	<i>Carduelis</i>	5	4.02-4.51	3.96-4.99	1.05-1.21
	<i>Chloris</i>	1	7.94	7.21	2.62
	<i>Coccothraustes</i>	1	18.89	16.73	4.23
	<i>Fringilla</i>	2	7.67	6.14	1.24
	<i>Loxia</i>	2	11.78	9.75	1.73
	<i>Pinicola</i>	1	7.21	7.93	1.35
	<i>Pyrhula</i>	1	6.83	7.92	1.05
	<i>Serinus</i>	1	3.65	3.42	0.73
Emberizidae	<i>Emberiza</i>	5	4.32-4.88	3.69-5.37	1.16-1.28
	<i>Plectrophenax</i>	1	3.78	4.08	1.25

Table 1 Size table of *mandibula* (No. sp = number of species; PL – partial length – lenght of the apex; Bc = breadth of the apex; PB = partial breadth – breadth of the *ramus mandibulae*)
1. táblázat Alsó álkapocs mérési táblázata (No. sp = fajszám; PL = részleges hossz – a csőr vég hossza; PB = részleges szélesség – a csőr vég szélessége)

Family – Család	Genus – Nemzetség	No.sp	TL mm	PL=LTB mm	Dc mm
Alaudidae	<i>Alauda</i>	1	17.74	3.69	1.15
	<i>Calandrella</i>	1	17.29	2.51	1.14
	<i>Eremophila</i>	0			
	<i>Galerida</i>	1	22.84	4.02	1.18
	<i>Lullula</i>	1	18.53	3.92	1.17
	<i>Melanocorypha</i>	1		3.95	1.25
Hirundinidae	<i>Delichon</i>	1	16.75	3.81	0.97
	<i>Hirundo</i>	1	15.37	2.83	1.01
	<i>Riparia</i>	1	15.68	3.61	1.11
Paridae	<i>Aegithalos</i>	1	11.47	1.79	0.91
	<i>Panurus</i>	0			
	<i>Parus</i>	5	12.32-13.64	2.19-2.67	0.77-1.26
	<i>Remiz</i>	1	13.06	2.46	0.69
Muscicapidae	<i>Erithacus</i>	1	14.09	2.35	0.86
	<i>Luscinia</i>	3	18.14-18-17	3.01-3.03	0.89-1.01
	<i>Monticola</i>	1	24.41	4.63	1.35
	<i>Muscicapa – Ficedula</i>	4	15.08-19.64	2.62-2.83	0.82-1.16
	<i>Oenanthe</i>	2	14.55-16.23	2.99-3.44	0.91-1.01
	<i>Phoenicurus</i>	2	15.12-15.77	2.97-3.02	0.79-0.82
	<i>Saxicola</i>	3	14.55-17.81	2.64-3.19	0.88-1.01
Turdidae	<i>Turdus</i>	6	24.16-29.24	4.45-5.52	1.35-1.91
Oriolidae	<i>Oriolus</i>	1	25.71	4.61	1.67
Certhiidae	<i>Certhia</i>	2	11.82	1.93	0.66
Sittidae	<i>Sitta</i>	1	16.01	2.99	0.64
Troglodytidae	<i>Troglodytes</i>	1	13.01	2.21	0.59
Cinclidae	<i>Cinclus</i>	1	20.57	3.84	1.44
Bombycillidae	<i>Bombycilla</i>	1	24.22	4.24	1.43

Family – Család	Genus – Nemzetség	No.sp	TL mm	PL=LTB mm	Dc mm
Motacillidae	<i>Anthus</i>	5	17.43-19.14	3.02-3.63	0.99-1.21
	<i>Motacilla</i>	3	15.91-16.65	2.69-3.21	0.87-1.02
Sylviidae	<i>Acrocephalus</i>	4	13.24-18.67	2.41-3.13	0.76-1.02
	<i>Cettia</i>	1	14.35	1.97	0.92
	<i>Hippolais</i>	2	13.01-15.36	2.34-2.58	0.72-0.76
	<i>Locustella</i>	3	14.25	2.47	0.75
	<i>Luscinola</i>	1	14.98	2.46	0.71
	<i>Phylloscopus</i>	3	12.41-13.91	2.22-3.54	0.63-0.71
	<i>Regulus</i>	1	9.91	1.78	0.83
	<i>Sylvia</i>	5	14.32-18.56	2.38-3.66	0.77-1.04
Prunellidae	<i>Prunella</i>	2	16.27	2.86	1.26
Laniidae	<i>Lanius</i>	3	18.49-23.97	2.97-4.37	1.16-1.51
Sturnidae	<i>Sturnus – Pastor</i>	2	26.34-26.61	4.29-4.47	1.69-1.72
Passeridae	<i>Passer</i>	2	17.94-19.61	2.71-3.21	0.92-1.24
Fringillidae	<i>Carduelis</i>	5	14.22-16.02	2.44-3.26	0.75-1.19
	<i>Chloris</i>	1	18.52	3.23	1.05
	<i>Coccothraustes</i>	1	23.32	4.29	1.27
	<i>Fringilla</i>	2	17.67-18.92	2.62-2.84	0.98-1.03
	<i>Loxia</i>	2	18.61-22.08	3.28-3.67	1.21-1.47
	<i>Pinicola</i>	1	23.46	4.04	1.41
	<i>Pyrhula</i>	1	19.32	3.35	1.17
	<i>Serinus</i>	1	17.28	2.66	1.11
Emberizidae	<i>Emberiza</i>	5	17.16-21.08	2.99-4.61	0.84-1.39
	<i>Plectrophenax</i>	1	18.04	2.98	1.12

Table 2 Size table of *coracoideum* (No.sp = number of species; TL = total length; PL-LTM = partial length – lenght of the *tuberculum brachialis*; Bc = breadth of the corpus)
2. táblázat Hollócsőrcsont mérési táblázata (No. sp = fajszám; TL = teljes hossz; PL-LTM = részleges hossz – a *tuberculum brachialis* hossza; Bc = a diafizis szélessége)

Family – Család	Genus – Nemzetség	No.sp	PL mm	BA mm	Bc mm
Alaudidae	<i>Alauda</i>	1	4.29	3.18	1.31
	<i>Calandrella</i>	1	3.48	2.41	1.24
	<i>Eremophila</i>	1	4.57	3.28	1.39
	<i>Galerida</i>	1	5.12	3.76	1.61
	<i>Lullula</i>	1	4.21	3.13	1.33
	<i>Melanocorypha</i>	1	5.92	3.98	1.93
Hirundinidae	<i>Delichon</i>	1	3.15	1.71	1.38
	<i>Hirundo</i>	1	2.89	1.67	1.19
	<i>Riparia</i>	1	2.97	1.74	1.21
Paridae	<i>Aegithalos</i>	0			
	<i>Panurus</i>	1	2.71	2.07	1.21
	<i>Parus</i>	5	2.38-3.13	1.87-2.54	0.81-1.32
	<i>Remiz</i>	1	2.51	2.47	1.23
Muscicapidae	<i>Erithacus</i>	1	2.65	1.92	1.11
	<i>Luscinia</i>	3	3.52-3.84	2.46-2.49	1.19-1.37
	<i>Monticola</i>	1	5.01	3.29	2.13
	<i>Muscicapa – Ficedula</i>	4	2.56-2.91	1.82-2.01	1.02-1.27
	<i>Oenanthe</i>	2	3.15-3.27	2.27-2.49	1.25-1.29
	<i>Phoenicurus</i>	2	2.78-3.17	2.48-3.19	1.23-1.29
	<i>Saxicola</i>	3	2.72-3.39	1.75-2.49	1.12-1.24
Turdidae	<i>Turdus</i>	6	4.98-7.39	3.76-4.17	1.91-2.39
Oriolidae	<i>Oriolus</i>	1	5.78	4.21	2.33
Certhiidae	<i>Certhia</i>	2	2.47	2.51	0.85
Sittidae	<i>Sitta</i>	1	3.48	2.17	1.16
Troglodytidae	<i>Troglodytes</i>	1	2.58	1.88	1.26
Cinclidae	<i>Cinclus</i>	0			
Bombycillidae	<i>Bombycilla</i>	1	5.16	2.93	1.95

Family – Család	Genus – Nemzetség	No.sp	PL mm	BA mm	Bc mm
Motacillidae	<i>Anthus</i>	5	3.14-4.32	1.94-2.56	1.16-1.59
	<i>Motacilla</i>	3	3.24-4.23	2.04-2.48	1.33-1.72
Sylviidae	<i>Acrocephalus</i>	4	2.46-3.26	1.51-1.99	1.06-1.74
	<i>Cettia</i>	1	2.88	1.75	1.85
	<i>Hippolais</i>	2	2.59-3.02	1.62-2.15	0.91-1.15
	<i>Locustella</i>	3	2.15-3.32	1.78-2.08	0.85-1.17
	<i>Luscinola</i>	1	2.72	1.78	1.47
	<i>Phylloscopus</i>	3	2.25-2.88	1.98-2.31	1.01-1.24
	<i>Regulus</i>	0			
	<i>Sylvia</i>	5	2.35-3.48	1.95-2.65	1.11-1.23
Prunellidae	<i>Prunella</i>	2	3.88-4.37	2.31-2.81	1.52-1.62
Laniidae	<i>Lanius</i>	3	3.66-4.83	2.01-3.09	1.32-2.01
Sturnidae	<i>Sturnus – Pastor</i>	2	5.71-5.79	3.07-3.26	2.17-2.19
Passeridae	<i>Passer</i>	2	3.91-4.02	2.01-2.08	1.51-1.64
Fringillidae	<i>Carduelis</i>	5	3.29-3.61	2.29-2.92	1.14-1.21
	<i>Chloris</i>	1	4.69	2.69	1.62
	<i>Coccothraustes</i>	1	5.27	3.84	1.88
	<i>Fringilla</i>	2	2.83-3.29	2.14-2.42	1.35-1.36
	<i>Loxia</i>	2	3.78-4.11	3.28-3.63	1.56-1.58
	<i>Pinicola</i>	1	4.99	2.94	2.19
	<i>Pyrhula</i>	1	3.96	2.84	1.91
	<i>Serinus</i>	1	3.49	2.29	1.44
Emberizidae	<i>Emberiza</i>	5	3.24-5.24	2.42-3.73	1.37-1.92
	<i>Plectrophenax</i>	1	4.99	2.92	1.41

Table 3 Size table of *scapula* (No.sp = number of species; PL = partial length – length of the proximal end; Bp = breadth of the proximal end; Bc = breadth of the corpus)
3. táblázat Lapocka mérési táblázata (No.sp = fajszám; PL = részleges hossz – a proximális vég hossza; Bp = a proximális vég szélessége; Bc = a lapocka test szélessége)

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bp mm	Bc mm	Bd mm
Alaudidae	<i>Alauda</i>	1	17.01	6.25	2.31	4.65
	<i>Calandrella</i>	0				
	<i>Eremophila</i>	0				
	<i>Galerida</i>	1	28.01	8.28	2.46	6.09
	<i>Lullula</i>	1	23.02	6.55	2.28	4.88
	<i>Melanocorypha</i>	1	27.75	8.03	2.46	6.65
Hirundinidae	<i>Delichon</i>	1	14.06	6.42	1.86	4.86
	<i>Hirundo</i>	1	14.62	6.19	1.64	4.23
	<i>Riparia</i>	1	12.95	5.49	1.72	3.97
Paridae	<i>Aegithalos</i>	1	11.28	3.78	1.44	3.01
	<i>Panurus</i>	1	13.33	4.07	1.54	3.55
	<i>Parus</i>	5	13.76-14.25	3.71-4.98	1.44-1.71	2.04-4.08
	<i>Remiz</i>	0				
Muscicapidae	<i>Erithacus</i>	1	15.85	4.54	1.51	3.67
	<i>Luscinia</i>	3	17.43-17.73	5.43-5.65	1.59-1.68	4.26-4.59
	<i>Monticola</i>	1	24.88	8.09	2.34	6.36
	<i>Muscicapa – Ficedula</i>	4	12.85-13.11	4.36-4.67	1.312-1.52	3.49-3.52
	<i>Oenanthe</i>	2	16.75-18.21	5.65-5.68	1.73-1.74	4.12-4.51
	<i>Phoenicurus</i>	2	17.18-17.46	4.94-5.66	1.56-1.72	3.93-4.27
	<i>Saxicola</i>	3	15.45-18.82	4.67-6.05	1.44-1.76	3.65-4.11
Turdidae	<i>Turdus</i>	6	25.71-31.09	8.24-10.85	2.53-3.31	6.49-8.21
Oriolidae	<i>Oriolus</i>	1	30.54	12.27	3.11	7.69
Certhiidae	<i>Certhia</i>	2	9.75-12.53	3.17-4.22	1.12-1.28	3.15-3.19
Sittidae	<i>Sitta</i>	1	18.02	5.67	1.84	4.43
Troglodytidae	<i>Troglodytes</i>	1	12.07	4.54	1.71	2.75
Cinclidae	<i>Cinclus</i>	1	20.51	6.69	2.25	5.46
Bombycillidae	<i>Bombycilla</i>	1	24.94	8.16	2.16	6.83

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bp mm	Bc mm	Bd mm
Motacillidae	<i>Anthus</i>	5	20.08-21.48	5.14-6.75	1.87-2.11	4.36-5.11
	<i>Motacilla</i>	3	16.97-18.71	5.21-6.12	1.66-1.87	3.59-4.08
	<i>Acrocephalus</i>	4	11.97-19.05	4.09-5.78	1.34-1.89	3.01-4.03
Sylviidae	<i>Cettia</i>	1	15.42	4.04	1.63	3.96
	<i>Hippolais</i>	2	11.87-14.62	3.08-5.04	1.33-1.61	3.48-3.99
	<i>Locustella</i>	3	13.14-14.67	4.14-4.18	1.23-1.28	2.91-3.34
	<i>Luscinola</i>	1	23.35	7.85	2.91	5.12
	<i>Phylloscopus</i>	3	12.19-12.97	4.12-4.39	1.16-1.63	3.31-3.57
	<i>Regulus</i>	0				
	<i>Sylvia</i>	5	13.46-18.17	4.47-5.48	1.52-1.73	3.69-4.13
Prunellidae	<i>Prunella</i>	2	15.37-17.31	5.08-5.17	1.69-1.71	4.12-5.21
	<i>Lanius</i>	3	19.51-26.43	5.96-8.24	2.04-2.51	4.57-6.84
Sturnidae	<i>Sturnus – Pastor</i>	2	27.53-28.95	8.56-9.03	2.67-2.78	6.31-6.47
	<i>Passer</i>	2	16.49-19.35	5.29-6.12	1.61-1.68	4.54-4.63
Fringillidae	<i>Carduelis</i>	5	13.49-16.53	4.76-5.84	1.45-1.78	3.75-4.33
	<i>Chloris</i>	1	18.19	6.14	1.89	4.73
	<i>Coccothraustes</i>	1	17.45	6.47	2.03	4.71
	<i>Fringilla</i>	2	18.12-18.65	6.09-6.12	1.71-1.73	4.44-4.62
	<i>Loxia</i>	2	17.45-18.54	6.47-6.61	2.03-2.05	4.71-5.73
	<i>Pinicola</i>	1	23.75	7.19	2.46	5.38
	<i>Pyrrhula</i>	1	20.22	6.67	2.03	5.23
	<i>Serinus</i>	1	17.95	6.04	1.74	4.37
Emberizidae	<i>Emberiza</i>	5	18.65-24.99	5.96-8.05	1.96-2.32	4.18-5.42
	<i>Plectrophenax</i>	0				

Table 4 Size table of *humerus* (No.sp = number of species; TL = total length; Bp – breadth of the proximal end; Bc = breadth of the corpus; Bd = breadth of the distal end)

4. táblázat Felkarcsont mérési táblázata (No. sp = fajszám; TL = teljes hossz; Bp = a proximális vég szélessége; Bc = a diafizis szélessége; Bd = a disztális vég szélessége)

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bp mm	BC mm	Bd mm
Alaudidae	<i>Alauda</i>	1	29.68	3.96	1.92	3.32
	<i>Calandrella</i>	1	25.73	3.38	1.51	2.88
	<i>Eremophila</i>	1	29.51	3.97	1.91	3.51
	<i>Galerida</i>	1	34.46	3.92	2.25	3.68
	<i>Lullula</i>	1	28.95	3.21	1.92	3.13
	<i>Melanocorypha</i>	0				
Hirundinidae	<i>Delichon</i>	1	22.05	3.71	1.65	2.93
	<i>Hirundo</i>	1	23.51	3.13	1.54	2.86
	<i>Riparia</i>	1	21.67	3.53	1.61	2.85
Paridae	<i>Aegithalos</i>	1	13.37	2.18	1.03	1.93
	<i>Panurus</i>	0				
	<i>Parus</i>	5	15.46-18.71	2.22-2.71	1.12-1.34	2.19-2.69
	<i>Remiz</i>	0				
Muscicapidae	<i>Erithacus</i>	1	18.06	2.61	1.22	2.35
	<i>Luscinia</i>	3	21.71-22.22	2.79-3.15	1.39-1.51	2.46-2.82
	<i>Monticola</i>	0				
	<i>Muscicapa – Ficedula</i>	4	17.15-20.11	2.37-2.69	1.21-1.36	1.61-2.49
	<i>Oenanthe</i>	1	25.01	3.27	1.71	2.92
	<i>Phoenicurus</i>	2	22.56-22.94	2.87-2.91	1.42-1.63	2.89-3.07
	<i>Saxicola</i>	3	19.18-25.68	2.61-3.26	1.27-1.57	2.31-2.91
Turdidae	<i>Turdus</i>	6	30.67-40.43	4.32-5.48	2.13-2.76	3.75-4.89
Oriolidae	<i>Oriolus</i>	1	39.32	5.06	2.91	4.91
Certhiidae	<i>Certhia</i>	1	16.56	2.26	1.18	1.84
Sittidae	<i>Sitta</i>	1	22.42	2.79	1.74	2.89
Troglodytidae	<i>Troglodytes</i>	1	14.51	2.34	1.07	1.94
Cinclidae	<i>Cinclus</i>	1	24.97	3.85	1.71	3.29
Bombycillidae	<i>Bombycilla</i>	1	30.94	4.35	2.13	3.88

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bp mm	BC mm	Bd mm
Motacillidae	<i>Anthus</i>	5	23.27-28.38	2.99-3.58	1.43-1.92	2.52-2.99
	<i>Motacilla</i>	3	22.01-25.17	2.84-3.28	1.42-1.53	2.51-2.97
Sylviidae	<i>Acrocephalus</i>	4	15.42-23.54	2.12-3.04	0.97-1.58	2.03-2.77
	<i>Cettia</i>	0				
	<i>Hippolais</i>	2	14.82-19.32	2.05-2.63	1.07-1.53	1.89-2.99
	<i>Locustella</i>	3	15.15-18.10	2.04-2.48	1.03-1.21	1.89-2.16
	<i>Luscinola</i>	1	16.19	2.06	1.29	02.05
	<i>Phylloscopus</i>	3	15.76-17.51	2.02-2.79	1.03-1.22	1.97-2.05
	<i>Regulus</i>	1	12.48	1.54	1.05	1.52
	<i>Sylvia</i>	5	16.44-21.83	2.17-4.01	1.14-1.53	2.04-2.75
Prunellidae	<i>Prunella</i>	2	23.35-26.99	2.96-3.83	1.35-2.19	2.56-3.42
Laniidae	<i>Lanius</i>	3	24.35-34.71	3.23-4.69	1.55-2.44	2.99-4.07
Sturnidae	<i>Sturnus – Pastor</i>	2	34.38-35.31	4.59-4.93	2.41-2.45	4.36-4.58
Passeridae	<i>Passer</i>	2	19.20-21.71	2.96-3.21	1.49-1.51	2.62-2.75
Fringillidae	<i>Carduelis</i>	5	16.27-21.09	2.38-3.14	1.19-1.56	2.29-3.78
	<i>Chloris</i>	1	22.65	3.76	1.62	3.78
	<i>Coccothraustes</i>	1	28.11	4.01	2.06	3.75
	<i>Fringilla</i>	2	22.73-24.29	3.17-3.29	1.58-1.59	2.72-2.99
	<i>Loxia</i>	2	22.06-25.11	3.41-3.77	1.75-1.84	3.01-3.42
	<i>Pinicola</i>	1	30.43	4.31	2.57	3.78
	<i>Pyrrhula</i>	1	25.11	3.12	1.89	2.94
	<i>Serinus</i>	1	22.14	3.24	1.49	2.71
Emberizidae	<i>Emberiza</i>	5	22.37-29.22	2.85-4.51	1.49-2.19	2.64-3.76
	<i>Plectrophenax</i>	1	23.26	3.29	1.75	3.05

Table 5 Size table of *ulna* (No. sp = number of species; TL = total length; Bp – breadth of the proximal end; Bc = breadth of the corpus; Bd = breadth of the distal end)

5. táblázat Singcsont mérési táblázata (No. sp = fajszám; TL = teljes hossz; Bp = a proximális vég szélessége; Bc = a diafizis szélessége; Bd = a disztális vég szélessége)

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bp mm
Alaudidae	<i>Alauda</i>	1	17.21	3.91
	<i>Calandrella</i>	1	14.61	3.54
	<i>Eremophila</i>	1	17.05	4.24
	<i>Galerida</i>	1	18.56	4.08
	<i>Lullula</i>	1	16.39	3.73
	<i>Melanocorypha</i>	0		
Hirundinidae	<i>Delichon</i>	1	14.99	3.91
	<i>Hirundo</i>	1	15.09	3.68
	<i>Riparia</i>	1	14.01	3.99
Paridae	<i>Aegithalos</i>	1	8.42	2.17
	<i>Panurus</i>	1	9.05	2.81
	<i>Parus</i>	5	9.12-10.29	2.37-2.99
	<i>Remiz</i>	0		
Muscicapidae	<i>Erithacus</i>	1	9.79	2.78
	<i>Luscinia</i>	2	11.94-13.48	2.98-3.18
	<i>Monticola</i>	1	19.15	4.29
	<i>Muscicapa – Ficedula</i>	3	10.09-11.84	2.41-2.95
	<i>Oenanthe</i>	2	13.63-14.29	2.55-3.14
	<i>Phoenicurus</i>	2	12.69-13.21	2.97-3.09
	<i>Saxicola</i>	3	10.47-14.51	2.56-3.62
Turdidae	<i>Turdus</i>	6	18.51-25.03	4.51-5.93
Oriolidae	<i>Oriolus</i>	1	23.37	5.51
Certhiidae	<i>Certhia</i>	1	8.81	2.15
Sittidae	<i>Sitta</i>	1	13.51	2.57
Troglodytidae	<i>Troglodytes</i>	1	8.95	2.43
Cinclidae	<i>Cinclus</i>	1	10.33	3.85
Bombycillidae	<i>Bombycilla</i>	1	18.79	4.14

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bp mm
Motacillidae	<i>Anthus</i>	5	12.12-15.34	2.94-3.65
	<i>Motacilla</i>	3	12.52-13.77	2.71-3.03
Sylviidae	<i>Acrocephalus</i>	4	9.49-13.53	2.82-3.21
	<i>Cettia</i>	0		
	<i>Hippolais</i>	2	9.48-11.64	2.53-2.58
	<i>Locustella</i>	3	9.27-11.93	2.19-2.69
	<i>Luscinola</i>	0		
	<i>Phylloscopus</i>	3	9.51-10.52	1.95-2.39
	<i>Regulus</i>	1	7.61	2.62
	<i>Sylvia</i>	5	10.05-13.18	2.38-3.33
Prunellidae	<i>Prunella</i>	2	11.62-15.73	3.03-3.73
Laniidae	<i>Lanius</i>	3	13.77-18.45	3.19-4.49
Sturnidae	<i>Sturnus – Pastor</i>	2	21.19-21.63	5.07-5.16
Passeridae	<i>Passer</i>	1	11.29	2.46
Fringillidae	<i>Carduelis</i>	5	11.77-12.11	3.15-3.55
	<i>Chloris</i>	1	13.83	3.41
	<i>Coccothraustes</i>	1	15.93	5.11
	<i>Fringilla</i>	1	14.25	3.44
	<i>Loxia</i>	2	13.35-14.08	3.41-4.08
	<i>Pinicola</i>	1	17.32	4.35
	<i>Pyrrhula</i>	1	14.21	3.09
	<i>Serinus</i>	1	12.21	3.34
Emberizidae	<i>Emberiza</i>	4	12.19-16.36	3.25-4.24
	<i>Plectrophenax</i>	1	14.12	3.49

Table 6 Size table of *carpometacarpus* (No. sp = number of species; TL = total length; Bp – breadth of the proximal end);
6. táblázat Kézközépcent méreési táblázata (No. sp = fajszám; TL = teljes hossz; Bp = a proximális vég szélessége)

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bp mm	Bc mm
Alaudidae	<i>Alauda</i>	1	8.97	2.18	2.61
	<i>Calandrella</i>	1	7.96	2.49	3.04
	<i>Eremophila</i>	1	9.54	2.72	3.33
	<i>Galerida</i>	1	8.94	2.33	3.28
	<i>Lullula</i>	1	7.97	2.15	2.52
	<i>Melanocorypha</i>	0			
Hirundinidae	<i>Delichon</i>	1	10.17	2.27	2.61
	<i>Hirundo</i>	1	10.41	2.85	3.68
	<i>Riparia</i>	1	9.64	2.28	2.83
Paridae	<i>Aegithalos</i>	1	6.41	1.57	2.58
	<i>Panurus</i>	0			
	<i>Parus</i>	1	6.24	1.81	3.21
	<i>Remiz</i>	0			
Muscicapidae	<i>Erithacus</i>	1	5.71	1.42	1.78
	<i>Luscinia</i>	3	5.56-6.68	1.72-1.87	2.05-2.31
	<i>Monticola</i>	1	9.09	2.71	3.44
	<i>Muscicapa – Ficedula</i>	3	5.52-7.21	1.42-1.57	1.71-1.98
	<i>Oenanthe</i>	1	7.51	2.05	2.48
	<i>Phoenicurus</i>	1	6.49	1.96	2.15
	<i>Saxicola</i>	3	6.32-8.33	1.79-1.93	2.11-2.36
Turdidae	<i>Turdus</i>	6	8.73-13.16	2.51-4.24	2.48-4.84
Oriolidae	<i>Oriolus</i>	1	11.44	3.21	3.11
Certhiidae	<i>Certhia</i>	1	4.21	1.19	1.48
Sittidae	<i>Sitta</i>	1	6.12	1.65	1.85
Troglodytidae	<i>Troglodytes</i>	1	4.91	1.02	1.24
Cinclidae	<i>Cinclus</i>	1	6.27	1.88	2.81
Bombycillidae	<i>Bombycilla</i>	1	9.86	2.52	3.08

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bp mm	Bc mm
Motacillidae	<i>Anthus</i>	5	5.73-7.64	1.67-1.93	2.05-2.35
	<i>Motacilla</i>	3	6.61-7.13	1.71-1.82	1.98-2.11
	<i>Acrocephalus</i>	1	6.85	2.18	2.15
Sylviidae	<i>Cettia</i>	1	6.64	1.89	2.38
	<i>Hippolais</i>	2	5.48-6.43	1.28-1.36	1.38-1.56
	<i>Locustella</i>	3	5.47-5.99	1.21-1.27	1.35-1.47
	<i>Luscinola</i>	1	5.69	1.28	1.79
	<i>Phylloscopus</i>	3	4.41-5.14	1.16-1.24	1.31-1.45
	<i>Regulus</i>	1	3.85	0.98	1.27
Prunellidae	<i>Sylvia</i>	4	5.41-6.65	1.26-1.37	1.48-1.65
	<i>Prunella</i>	1	5.36	1.28	1.94
	<i>Lanius</i>	3	6.61-10.27	1.95-2.27	2.51-2.78
Sturnidae	<i>Sturnus – Pastor</i>	2	10.52-11.49	2.95-3.42	3.17-3.78
	<i>Passer</i>	1	6.28	1.76	1.98
	<i>Carduelis</i>	3	6.19-6.39	1.72-1.87	2.67-2.92
Fringillidae	<i>Chloris</i>	1	7.45	1.78	2.47
	<i>Coccothraustes</i>	1	8.46	2.21	2.64
	<i>Fringilla</i>	1	6.11	1.69	1.96
	<i>Loxia</i>	1	7.57	1.98	2.17
	<i>Pinicola</i>	1	8.27	2.74	3.27
	<i>Pyrthula</i>	1	7.61	1.97	2.19
Emberizidae	<i>Serinus</i>	1	5.49	1.18	1.77
	<i>Emberiza</i>	1	8.22	2.39	2.82
	<i>Plectrophenax</i>	1	7.57	2.03	2.38

Table 7 Size table of *phalanx proximalis digiti majoris* (No. sp = number of species; TL = total length; Bp – breadth of the proximal end; Bc = breadth of the corpus)

7. táblázat Kézujperc mérési táblázata (No. sp = fajszám; TL = teljes hossz; Bp = a proximális vég szélessége; Bc = a diafizis szélessége)

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bp mm	Bc mm	Bd mm
Alaudidae	<i>Alauda</i>	1	18.41	3.01	1.49	3.21
	<i>Calandrella</i>	1	15.78	2.78	1.32	2.78
	<i>Eremophila</i>	1	20.13	3.63	1.59	3.58
	<i>Galerida</i>	1	21.08	3.77	1.82	3.92
	<i>Lullula</i>	1	17.81	3.18	1.48	3.29
	<i>Melanocorypha</i>	0				
Hirundinidae	<i>Delichon</i>	1	13.33	2.59	1.34	2.95
	<i>Hirundo</i>	1	12.18	2.21	0.91	2.28
	<i>Riparia</i>	1	12.66	2.28	0.95	2.26
Paridae	<i>Aegithalos</i>	1	10.54	2.37	0.98	2.29
	<i>Panurus</i>	0				
	<i>Parus</i>	5	11.84-14.85	2.44-2.72	1.07-1.18	2.51-2.89
	<i>Remiz</i>	1	11.56	2.75	1.81	2.25
Muscicapidae	<i>Erithacus</i>	1	15.05	2.55	1.81	2.72
	<i>Luscinia</i>	3	18.46-19.46	2.76-3.43	1.17-1.55	2.96-3.29
	<i>Monticola</i>	1	23.33	4.39	1.92	4.07
	<i>Muscicapa</i>	0				
	<i>Oenanthe</i>	2	15.57-17.03	2.99-3.04	1.34-1.43	2.86-3.21
	<i>Phoenicurus</i>	2	15.25-15.34	2.51-2.71	1.17-1.27	2.61-2.81
	<i>Saxicola</i>	2	14.61-15.65	2.51-2.62	1.13-1.21	2.59-2.63
Turdidae	<i>Turdus</i>	6	25.54-30.12	4.19-5.61	2.03-2.35	4.39-5.41
Oriolidae	<i>Oriolus</i>	1	25.43	4.96	2.31	4.71
Certhiidae	<i>Certhia</i>	1	11.01	2.26	0.77	2.05
Sittidae	<i>Sitta</i>	1	16.75	3.12	1.27	3.21
Troglodytidae	<i>Troglodytes</i>	1	13.36	2.31	6.01	2.44
Cinclidae	<i>Cinclus</i>	1	20.39	4.31	1.95	4.34
Bombycillidae	<i>Bombycilla</i>	1	24.03	4.67	1.64	3.96

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bp mm	Bc mm	Bd mm
Motacillidae	<i>Anthus</i>	3	16.58-18.35	2.76-3.42	1.24-1.49	2.62-3.25
	<i>Motacilla</i>	3	14.23-16.36	2.85-3.07	1.15-1.34	2.39-2.91
	<i>Acrocephalus</i>	4	15.35-22.38	2.57-3.19	1.07-1.59	2.66-3.67
Sylviidae	<i>Cettia</i>	1	16.53	2.99	1.32	3.06
	<i>Hippolais</i>	2	14.99-15.88	2.77-2.98	1.15-1.17	2.59-2.64
	<i>Locustella</i>	3	15.78-19.78	2.73-3.02	1.19-1.41	2.71-3.02
	<i>Luscinola</i>	1	16.71	2.57	1.22	2.88
	<i>Phylloscopus</i>	3	12.03-13.32	1.88-2.23	0.88-0.97	2.01-2.09
	<i>Regulus</i>	1	9.89	1.86	0.95	2.18
	<i>Sylvia</i>	4	14.44-18.98	2.72-3.49	1.11-1.45	2.38-3.33
	<i>Prunella</i>	2	17.67-21.65	3.21-4.04	1.64-1.87	3.18-4.13
	<i>Lanius</i>	3	18.67-26.01	3.58-4.94	1.49-1.98	3.39-4.71
Sturnidae	<i>Sturnus – Pastor</i>	2	28.94-29.62	4.64-4.97	2.01-2.29	4.52-4.84
	<i>Passer</i>	2	16.38-18.41	2.93-3.36	1.34-1.51	2.96-3.21
	<i>Carduelis</i>	5	12.68-14.95.	2.19-2.57	1.09-1.24	2.41-2.54
	<i>Chloris</i>	1	17.37	3.28	1.41	2.84
	<i>Coccothraustes</i>	1	21.37	4.16	1.94	3.85
	<i>Fringilla</i>	2	15.65-16.71	2.68-3.05	1.21-1.49	2.75-2.78
	<i>Loxia</i>	2	16.67-19.28	3.42-3.91	1.49-1.76	3.43-3.61
	<i>Pinicola</i>	1	18.42	3.03	1.73	2.98
	<i>Pyrrhula</i>	1	18.36	3.08	1.51	3.11
Emberizidae	<i>Serinus</i>	1	16.11	2.93	1.42	3.01
	<i>Emberiza</i>	5	16.35-23.82	2.65-4.01	1.35-1.79	2.72-3.99
	<i>Plectrophenax</i>	1	18.58	3.19	1.39	3.15

Table 8 Size table of femur (No.sp = number of species; TL = total length; Bp – breadth of the proximal end; Bc = breadth of the corpus; Bd = breadth of the distal end)

8. táblázat Combcsont mérési táblázata (No. sp = fajszám; TL = teljes hossz; Bp = a proximális vég szélessége; Bc = a diafizis szélessége; Bd = a disztális vég szélessége)

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bc mm	Bd mm
Alaudidae	<i>Alauda</i>	1	30.21	1.03	2.09
	<i>Calandrella</i>	1	31.21	1.66	2.44
	<i>Eremophila</i>	1	33.36	1.76	2.94
	<i>Galerida</i>	1	34.01	1.61	3.17
	<i>Lullula</i>	1	29.14	1.27	2.64
	<i>Melanocorypha</i>	1	39.53	1.92	3.71
Hirundinidae	<i>Delichon</i>	1	21.12	1.01	2.08
	<i>Hirundo</i>	1	20.34	0.81	1.85
	<i>Riparia</i>	1	19.93	0.83	1.95
Paridae	<i>Aegithalos</i>	1	22.24	0.84	1.92
	<i>Panurus</i>	0			
	<i>Parus</i>	5	23.44-26.16	1.03-1.09	2.05-2.25
	<i>Remiz</i>	1	21.43	0.93	1.97
Muscicapidae	<i>Erithacus</i>	1	30.39	1.06	2.13
	<i>Luscinia</i>	3	34.88-36.69	1.13-1.44	2.33-2.78
	<i>Monticola</i>	1	40.64	1.91	3.55
	<i>Muscicapa – Ficedula</i>	3	21.81-23.91	0.85-0.92	1.44-1.99
	<i>Oenanthe</i>	2	28.76-32.89	1.25-1.34	2.36-2.71
	<i>Phoenicurus</i>	2	29.42-30.19	0.97-1.04	2.21-2.24
	<i>Saxicola</i>	3	29.39-33.38	1.12-1.24	2.22-2.49
Turdidae	<i>Turdus</i>	6	44.45-51.66	1.71-2.41	3.36-4.61
Oriolidae	<i>Oriolus</i>	1	35.91	1.93	4.13
Certhiidae	<i>Certhia</i>	1	19.29	0.81	1.87
Sittidae	<i>Sitta</i>	1	27.51	1.19	2.71
Troglodytidae	<i>Troglodytes</i>	1	24.29	1.01	1.96
Cinclidae	<i>Cinclus</i>	1	39.09	1.65	3.39
Bombycillidae	<i>Bombycilla</i>	1	38.67	1.63	3.55

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bc mm	Bd mm
Motacillidae	<i>Anthus</i>	5	30.11-34.59	1.01-1.39	2.22-3.16
	<i>Motacilla</i>	3	31.09-31.37	1.15-1.38	2.06-2.42
	<i>Acrocephalus</i>	4	28.02-40.21	1.27-1.52	2.13-3.21
Sylviidae	<i>Cettia</i>	1	31.12	1.41	2.33
	<i>Hippolais</i>	2	27.93-30.32	0.99-1.11	2.22-2.28
	<i>Locustella</i>	0			
	<i>Luscinola</i>	1	30.55	1.22	2.34
	<i>Phylloscopus</i>	3	24.94-26.23	0.82-0.95	1.77-1.94
	<i>Regulus</i>	1	21.46	0.78	1.61
	<i>Sylvia</i>	5	26.55-33.51	0.96-1.46	2.11-2.77
	<i>Prunella</i>	1	30.26	1.42	2.64
	<i>Lanius</i>	3	31.95-40.91	1.41-1.91	2.65-3.69
Sturnidae	<i>Sturnus – Pastor</i>	2	47.14-49.85	1.93-1.98	3.89-4.95
	<i>Passer</i>	2	26.85-28.81	1.16-1.36	2.45-2.66
	<i>Carduelis</i>	5	21.13-25.07	0.93-1.13	1.99-2.29
	<i>Chloris</i>	0			
	<i>Coccothraustes</i>	1	35.61	1.67	3.46
	<i>Fringilla</i>	2	27.92-30.39	1.09-1.15	2.38-2.45
	<i>Loxia</i>	2	26.11-29.38	1.49-1.53	2.79-3.17
	<i>Pinicola</i>	1	37.94	1.65	3.61
	<i>Pyrhula</i>	1	30.58	1.65	2.63
Emberizidae	<i>Serinus</i>	1	27.71	1.18	2.57
	<i>Emberiza</i>	5	27.75-37.47	1.15-1.69	1.88-3.41
	<i>Plectrophenax</i>	1	30.27	1.22	2.67

Table 9 Size table of *tibiotarsus* (No. sp = number of species; TL = total length; Bc = breadth of the corpus; Bd = breadth of the distal end)
9. táblázat Lábszárcsont méresi táblázata (No. sp = fajszám; TL = teljes hossz; Bc = a diafizis szélessége; Bd = a disztális vég szélessége)

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bp mm	Bc mm	Bd mm
Alaudidae	<i>Alauda</i>	1	22.53	3.67	1.26	2.76
	<i>Calandrella</i>	1	20.41	2.75	1.29	2.21
	<i>Eremophila</i>	1	23.55	3.91	1.09	2.77
	<i>Galerida</i>	1	25.19	3.62	1.29	2.79
	<i>Lullula</i>	1	21.41	2.85	1.24	2.52
	<i>Melanocorypha</i>	1	28.29	4.94	1.43	3.53
Hirundinidae	<i>Delichon</i>	1	11.61	2.41	1.05	1.93
	<i>Hirundo</i>	1	10.48	2.36	1.33	1.71
	<i>Riparia</i>	1	11.06	2.25	0.95	1.95
Paridae	<i>Aegithalos</i>	1	17.22	2.01	0.84	1.75
	<i>Panurus</i>	0				
	<i>Parus</i>	5	16.45-18.91	2.22-2.47	0.81-0.98	1.54-1.83
	<i>Remiz</i>	1	14.55	2.19	0.98	1.87
Muscicapidae	<i>Erithacus</i>	1	24.33	2.35	0.86	1.98
	<i>Luscinia</i>	3	25.97-27.77	2.77-3.29	0.95-1.07	1.79-2.29
	<i>Monticola</i>	1	28.73	3.96	1.32	3.04
	<i>Muscicapa</i>	3	17.06-17.79	2.23-2.71	0.82-0.84	1.54-1.77
	<i>Oenanthe</i>	2	22.51-26.06	2.96-3.47	0.97-1.24	1.75-2.33
	<i>Phoenicurus</i>	2	22.45-22.83	2.35-2.38	0.79-0.91	1.82-1.93
	<i>Saxicola</i>	3	21.29-26.09	2.39-2.87	0.81-1.01	1.76-2.03
Turdidae	<i>Turdus</i>	6	31.81-34.43	3.82-4.86	1.44-1.76	2.98-4.22
Oriolidae	<i>Oriolus</i>	1	26.86	3.14	1.51	2.96
Certhiidae	<i>Certhia</i>	1	15.76	2.23	0.82	2.28
Sittidae	<i>Sitta</i>	1	19.26	2.65	1.15	2.75
Troglodytidae	<i>Troglodytes</i>	0				
Cinclidae	<i>Cinclus</i>	0				
Bombycillidae	<i>Bombycilla</i>	1	21.34	3.71	1.24	3.25

Family – Család	Genus – Nemzetség	No.sp	TL mm	Bp mm	Bc mm	Bd mm
Motacillidae	<i>Anthus</i>	5	20.44-26.31	2.41-3.14	1.04-1.09	2.12-2.49
	<i>Motacilla</i>	3	20.07-23.39	2.41-3.11	1.01-1.09	1.97-2.21
	<i>Acrocephalus</i>	3	20.01-28.77	2.38-3.23	0.97-1.48	1.86-2.88
Sylviidae	<i>Cettia</i>	1	22.59	2.93	0.96	1.77
	<i>Hippolais</i>	2	21.17-22.96	2.46-2.52	0.91-0.94	1.71-1.75
	<i>Locustella</i>	3	21.11-22.04	2.28-2.64	0.84-0.98	1.66-2.26
	<i>Luscinola</i>	1	21.67	2.58	1.12	1.79
	<i>Phylloscopus</i>	3	19.77-20.81	2.09-2.17	0.64-0.79	1.27-1.42
	<i>Regulus</i>	1	12.17	1.39	0.68	1.38
Prunellidae	<i>Sylvia</i>	5	19.77-25.51	2.21-3.19	0.84-1.17	1.47-2.12
	<i>Prunella</i>	1	21.25	3.38	0.94	2.23
	<i>Lanius</i>	3	21.92-26.79	2.79-3.99	1.41-1.73	2.15-2.79
Sturnidae	<i>Sturnus – Pastor</i>	2	29.79-33.23	4.33-4.67	1.49-1.68	3.04-3.46
	<i>Passer</i>	2	18.68-19.26	2.54-3.33	1.11-1.24	1.79-1.89
	<i>Carduelis</i>	4	14.52-18.79	2.17-2.49	0.81-1.11	1.75-2.59
	<i>Chloris</i>	1	18.21	2.84	1.03	2.22
	<i>Coccothraustes</i>	1	22.33	3.91	1.46	2.71
	<i>Fringilla</i>	2	18.52-19.76	26.51-2.85	0.93-0.98	1.97-1.99
	<i>Loxia</i>	2	16.84-17.04	3.34-3.45	1.22-1.35	2.78-2.81
	<i>Pinicola</i>	1	23.24	4.25	1.42	3.22
	<i>Pyrrhula</i>	1	19.36	2.79	1.05	2.12
Emberizidae	<i>Serinus</i>	1	19.35	2.82	0.98	2.19
	<i>Emberiza</i>	3	19.26-26.51	2.69-3.73	0.86-1.37	2.12-3.03
	<i>Plectrophenax</i>	1	20.41	3.03	0.96	2.02

Table 10 Size table of *tarsometatarsus* (No. sp = number of species; TL = total length; Bp – breadth of the proximal end; Bc = breadth of the corpus; Bd = breadth of the distal end)
10. táblázat Csüd mérési táblázata (No. sp = fajszám; TL = teljes hossz; Bp = a proximális vég szélessége; Bc = a diafizis szélessége; Bd = a disztális vég szélessége)

Family – Család	Genus – Nemzetség	No.sp	TL mm	PL-Bp mm
Alaudidae	<i>Alauda</i>	1	5.35	1.62
	<i>Calandrella</i>	0		
	<i>Eremophila</i>	1	5.54	1.73
	<i>Galerida</i>	1	6.51	1.52
	<i>Lullula</i>	0		
	<i>Melanocorypha</i>	0		
Hirundinidae	<i>Delichon</i>	0		
	<i>Hirundo</i>	1	4.34	1.33
	<i>Riparia</i>	0		
Paridae	<i>Aegithalos</i>	1	4.55	1.13
	<i>Panurus</i>	0		
	<i>Parus</i>	0		
	<i>Remiz</i>	1	5.61	1.59
Muscicapidae	<i>Erithacus</i>	0		
	<i>Luscinia</i>	1	4.07	1.33
	<i>Monticola</i>	1	5.03	1.47
	<i>Muscicapa</i>	1	3.82	2.04
	<i>Oenanthe</i>	1	4.65	1.33
	<i>Phoenicurus</i>	1	4.23	1.16
	<i>Saxicola</i>	1	6.78	0.78
Turdidae	<i>Turdus</i>	6	5.48-8.21	1.32-1.84
Oriolidae	<i>Oriolus</i>	1	6.32	1.68
Certhiidae	<i>Certhia</i>	1	5.31	1.14
Sittidae	<i>Sitta</i>	1	7.15	1.89
Troglodytidae	<i>Troglodytes</i>	1	4.29	0.83
Cinclidae	<i>Cinclus</i>	1	5.65	1.92
Bombycillidae	<i>Bombycilla</i>	1	6.02	1.58

Family – Család	Genus – Nemzetség	No.sp	TL mm	PL– Bp mm
Motacillidae	<i>Anthus</i>	1	5.34	1.37
	<i>Motacilla</i>	3	3.14-6.32	1.21-1.45
Sylviidae	<i>Acrocephalus</i>	1	6.48	1.51
	<i>Cettia</i>	0		
	<i>Hippolais</i>	1	6.32	1.79
	<i>Locustella</i>	0		
	<i>Luscinola</i>	0		
	<i>Phylloscopus</i>	0	4.01	5.08
	<i>Regulus</i>	1	5.13	1.43
	<i>Sylvia</i>	0		
Prunellidae	<i>Prunella</i>	1	6.95	2.68
Laniidae	<i>Lanius</i>	1	6.01	2.11
Sturnidae	<i>Sturnus – Pastor</i>	1	6.42	1.84
Passeridae	<i>Passer</i>	1	5.25	1.52
Fringillidae	<i>Carduelis</i>	0		
	<i>Chloris</i>	0		
	<i>Coccothraustes</i>	1	6.42	2.25
	<i>Fringilla</i>	1	5.36	1.24
	<i>Loxia</i>	1	6.45	2.03
	<i>Pinicola</i>	1	4.47	1.78
	<i>Pyrrhula</i>	1	4.63	1.24
	<i>Serinus</i>	1	3.83	1.02
Emberizidae	<i>Emberiza</i>	1	6.51	1.48
	<i>Plectrophenax</i>	0		

Table 11 Size table of *phalanx unguicularis* (No.sp = number of species; TL = total length; PL – Bp – partial length-bre-
adth of the proximal end)
11. táblázat Karomcsont mérési táblázata (No. sp = fajszám; TL = teljes hossz; PL – Bp = részleges hossz – a proximális
vég szélessége)

Plate 2 Mandibula (Lower jaw)
2. táblakép Mandibula (Alsó állkapocs)

Plate 1 Mandibula (Lower jaw)
1. táblakép Mandibula (Alsó állkapocs)

Plate 4 Mandibula (Lower jaw)
4. táblakép Mandibula (Alsó állkapocs)

Plate 3 Mandibula (Lower jaw)
3. táblakép Mandibula (Alsó állkapocs)

Plate 6 Coracoideum (right side)
7. táblakép Coracoideum (Hollócsőrcsont – jobb oldali)

Plate 5 Coracoideum (right side)
5. táblakép Coracoideum (Hollócsőrcsont – jobb oldali)

Plate 8 Coracoideum (right side)
8. táblakép Coracoideum (Hollócsőrcsont – jobb oldali)

Plate 7 Coracoideum (right side)
7. táblakép Coracoideum (Hollócsőrcsont – jobb oldali)

Plate 10 Scapula (right side)
10. táblakép Scapula (Lapocka – jobb oldali)

Plate 9 Scapula (right side)
9. táblakép Scapula (Lapocka – jobb oldali)

Plate 12 Scapula (right side)
12. táblakép Scapula (Lapocka – jobb oldali)

Plate 11 Scapula (right side)
11. táblakép Scapula (Lapocka – jobb oldali)

Plate 14 Humerus (epiphysis proximalis – left side)
14. táblakép Humerus (Felkarcsont, proximális epifízis – bal oldali)

Plate 13 Humerus (epiphysis proximalis – left side)
13. táblakép Humerus (Felkarcsont, proximális epifízis – bal oldali)

Plate 16 Humerus (epiphysis proximalis – left side)
16. táblakép Humerus (Felkarcsont, proximális epifízis – bal oldali)

Plate 15 Humerus (epiphysis proximalis – left side)
15. táblakép Humerus (Felkarcsont, proximális epifízis – bal oldali)

Plate 18 Humerus (epiphysis distalis – left side)
18. táblakép Humerus (Felkarcsont, disztális epifízis – bal oldali)

Plate 17 Humerus (epiphysis distalis – left side)
17. táblakép Humerus (Felkarcsont, disztális epifízis – bal oldali)

Plate 20 Humerus (epiphysis distalis - left side)
20. táblakép Humerus (Felkarcsont, disztális epifízis - bal oldali)

Plate 19 Humerus (epiphysis distalis - left side)
19. táblakép Humerus (Felkarcsont, disztális epifízis - bal oldali)

Plate 22 Ulna (epiphysis proximalis – left side)
22. táblakép Ulna (Singcsont, proximális epifízis – bal oldali)

Plate 21 Ulna (epiphysis proximalis – left side)
21. táblakép Ulna (Singcsont, proximális epifízis – bal oldali)

Plate 24 Ulna (epiphysis proximalis – left side)
24. táblakép Ulna (Singcsont, proximális epifízis – bal oldali)

Plate 23 Ulna (epiphysis proximalis – left side)
23. táblakép Ulna (Singcsont, proximális epifízis – bal oldali)

Plate 26 Ulna (epiphysis distalis – left side)
26. táblakép Ulna (Singcsont, disztális epifízis – bal oldali)

Plate 25 Ulna (epiphysis distalis – left side)
21. táblakép Ulna (Singcsont, disztális epifízis – bal oldali)

Plate 28 Ulna (epiphysis distalis - left side)
28. táblakép Ulna (Singcsont, disztális epifízis - bal oldali)

Plate 27 Ulna (epiphysis distalis - left side)
27. táblakép Ulna (Singcsont, disztális epifízis - bal oldali)

Plate 30 Carpometacarpus (right side)
30. táblakép Carpometacarpus (Kézközépcsont – jobb oldali)

Plate 29 Carpometacarpus (right side)
29. táblakép Carpometacarpus (Kézközépcsont – jobb oldali)

Plate 32 Carpometacarpus (right side)
32. táblakép Carpometacarpus (Kézközépcsont – jobb oldali)

Plate 31 Carpometacarpus (right side)
31. táblakép Carpometacarpus (Kézközépcsont – jobb oldali)

Plate 34 Phalanx proximalis digiti majoris (right side)

34. táblakép Phalanx proximalis digiti majoris (Kézujjperc – jobb oldali)

Plate 33 Phalanx proximalis digiti majoris (right side)

33. táblakép Phalanx proximalis digiti majoris (Kézujjperc – jobb oldali)

Plate 36 Phalanx proximalis digiti majoris (right side)
36. táblakép Phalanx proximalis digiti majoris (Kézujjperc – jobb oldali)

Plate 35 Phalanx proximalis digiti majoris (right side)
35. táblakép Phalanx proximalis digiti majoris (Kézujjperc – jobb oldali)

Plate 38 Femur (epiphysis distalis – left side)
38. táblakép Femur (Combcsonot, disztális epifízis – bal oldali)

Plate 37 Femur (epiphysis distalis – left side)
37. táblakép Femur (Combcsonot, disztális epifízis – bal oldali)

Plate 40 Femur (epiphysis distalis – left side)
40. táblakép Femur (Combcsont, disztális epifízis – bal oldali)

Plate 39 Femur (epiphysis distalis – left side)
39. táblakép Femur (Combcsont, disztális epifízis – bal oldali)

Plate 42 Tibiotarsus (epiphysis proximalis - left side)
42. táblakép Tibiotarsus (Lábszárcsont, disztális epifízis - bal oldali)

Plate 41 Tibiotarsus (epiphysis proximalis - left side)
41. táblakép Tibiotarsus (Lábszárcsont, disztális epifízis - bal oldali)

Plate 44 Tibiotarsus (epiphysis proximalis – left side)
44. táblakép Tibiotarsus (Lábszárcsont, disztális epifízis – bal oldali)

Plate 43 Tibiotarsus (epiphysis proximalis – left side)
43. táblakép Tibiotarsus (Lábszárcsont, disztális epifízis – bal oldali)

Plate 46 Tarsometatarsus (epiphysis distalis – right side)
46. táblakép Tarsometatarsus (Csüd, disztális epifízis – jobb oldali)

Plate 45 Tarsometatarsus (epiphysis distalis – right side)
45. táblakép Tarsometatarsus (Csüd, disztális epifízis – jobb oldali)

Plate 48 Tarsometatarsus (epiphysis distalis - right side)
48. táblakép Tarsometatarsus (Csüd, disztális epifízis - jobb oldali)

Plate 47 Tarsometatarsus (epiphysis distalis - right side)
47. táblakép Tarsometatarsus (Csüd, disztális epifízis - jobb oldali)

Plate 50 Phalanx ungularis (Claw)
50. táblakép Phalanx ungularis (Karomcsont)

Plate 49 Phalanx ungularis (Claw)
49. táblakép Phalanx ungularis (Karomcsont)

Plate 52 Phalanx ungularis (Claw)
52. táblakép Phalanx ungularis (Karomcsont)

Plate 51 Phalanx ungularis (Claw)
51. táblakép Phalanx ungularis (Karomcsont)