

SPIS RZECZY — CONTENTS

Nr 1

- Z. BOCHEŃSKI, T. OLEŚ. Experimental studies on nesting of the Bullfinch *Pyrrhula pyrrhula* (LINNAEUS, 1758) in aviaries — Doświadczenia z gnieźdzeniem się gilów *Pyrrhula pyrrhula* (LINNAEUS, 1758) w wolierach. 3

Nr 2

- Z. BOCHEŃSKI, T. OLEŚ, T. TOMEK. Materials for the avifauna of People's Democratic Republic of Korea — Materiały do fauny ptaków Koreańskiej Republiki Ludowo-Demokratycznej 13

Nr 3

- A. DYRCZ. Jesienna wędrówka ptaków na przełęczy pod Szrenicą (Karkonosze) — Autumn migration of birds at Szrenica Pass (Karkonosze Mts., Poland). 33

Nr 4

- A. DYRCZ. Ptaki Zbiornika Otmuchowskiego — Birds of the Otmuchów Water Reservoir 69

Nr 5

- W. GÓRSKI. Zimowanie ptaków wodnych w zachodniej i środkowej części polskiego wybrzeża Bałtyku w latach 1969—1972 — Wintering of water birds in the western and middle parts of the Polish coast of the Baltic Sea in 1969—1972 103

Nr 6

- P. PROFUS, P. MIELCZAREK. Zmiany liczebności bociana białego *Ciconia ciconia* (LINNAEUS, 1758) w południowej Polsce — Changes in the numbers of the White Stork *Ciconia ciconia* (LINNAEUS, 1758) in southern Poland 139

Nr 7

- M. MŁYNARSKI. *Chelydropsis murchisoni* (BELL, 1832) (*Testudines, Chelydridae*) from the Miocene of Przeworno in Silesia (Poland) — *Chelydropsis murchisoni* (BELL, 1832) (*Testudines, Chelydridae*) z miocenu Przeworna na Śląsku, Polska 219

Nr 8

- B. RZEBIK-KOWALSKA. The Pliocene and Pleistocene *Insectivora (Mammalia)* of Poland. IV. *Soricidae: Neomysorex* n. gen. and *Episoriculus* ELLERMAN et MORRISON-SCOTT, 1951 — Plioceni i plejstoceni owadożerne (*Insectivora, Mammalia*) Polski. IV. *Soricidae: Neomysorex* n. gen. i *Episoriculus* ELLERMAN et MORRISON-SCOTT, 1951 227

Nr 9

- T. CZYŻEWSKA. Natural Endocranial Casts of the *Canidae* from Węże I near Działoszyn (Poland) — Naturalne odlewy endocranium *Canidae* z Węzów I koło Działoszyna (Polska) 251

(Cd. spisu treści na III s. okładki)

POLSKA AKADEMIA NAUK
ZAKŁAD ZOOLOGII SYSTEMATYCZNEJ I DOŚWIADCZALNEJ

ACTA ZOOLOGICA CRACOVIENSIA

XXV
(Pars I)
1 — 12

PAŃSTWOWE WYDAWNICTWO NAUKOWE
WARSZAWA—KRAKÓW 1981

RADA REDAKCYJNA — EDITORIAL BOARD

Przewodniczący — President: Prof. dr R. J. Wojtusiak

Zast. przewodniczącego — Vice-President: Doc. dr W. Micherdziński

Sekretarz — Secretary: Dr hab. L. Sych

Członkowie — Members: Doc. dr Z. Bocheński, Prof. dr K. Kowalski, Prof. dr M. S. Klimaszewski, Prof. dr M. Młynarski, Prof. dr J. Pawłowski, Prof. dr J. Rafalski, Prof. dr J. Razowski, Prof. dr A. Riedel, Prof. dr H. Szarski, Prof. dr W. Szymczakowski

REDAKCJA — EDITORIAL STAFF

Redaktor naczelny — Editor-in-Chief: Prof. dr K. Kowalski

Zast. redaktora naczelnego — Subeditor: Doc. dr Z. Bocheński

Sekretarz — Secretary: Dr hab. L. Sych

Adres redakcji: Zakład Zoologii Systematycznej i Doświadczalnej Polskiej Akademii Nauk,
ul. Sławkowska 17, 31-016 Kraków

Address of the Editor: Institute of Systematic and Experimental Zoology, Polish Academy
of Sciences, Sławkowska 17, 31-016 Kraków, Poland

Redaktor PWN
Maria Kaniowa

© Copyright by Państwowe Wydawnictwo Naukowe, Warszawa—Kraków 1981

ISBN 83-01-02995-1
ISSN 0065-1710

PAŃSTWOWE WYDAWNICTWO NAUKOWE—ODDZIAŁ W KRAKOWIE

Wydanie I. Nakład 800+90 egz. Ark. wyd. 25, 25, Ark. druk. 19³/₁₆+18 wklejek. Papier druk. m/gł. kl. IV
70×100 71 g. Oddano do składania w maju 1980. Podpisano do druku w kwietniu 1981 r. Druk ukończono
w kwietniu 1981 r.

Zam. 421/80

Cena zł 110,—

DRUKARNIA UNIwersytetu Jagiellońskiego w Krakowie

Zygmunt BOCHEŃSKI and Tadeusz OLEŚ

Experimental Studies on the Nesting of Bullfinch *Pyrrhula pyrrhula* (LINNAEUS, 1758) in Aviaries

[With pls. I—III]

Doświadczenia z gnieźdzeniem się gilów *Pyrrhula pyrrhula* (LINNAEUS 1758) w wollerach*

Abstract. All nest building is done exclusively by the female Bullfinch. She breaks off dry twigs for building the base and makes the cup and lining of material gathered from the ground. The amount of material used depends upon the female's predisposition. Only the female incubates. The male accompanies her closely, while she is building the nest and brooding, and his close presence is necessary for the normal course of these activities.

I. INTRODUCTION

Studies on the nesting of song-birds in aviaries are mentioned among the investigations of the Ojców Biological Station, Institute of Systematic and Experimental Zoology, Polish Academy of Sciences, listed in an article occasioned by the 10th Anniversary of the foundation of the Station (BOCHEŃSKI, 1975). Generally speaking, their aim was to watch nest building, the factors governing the choice of material, and various biological details under controlled conditions, difficult to observe with birds at liberty. In 1969—1976 attempts were made to breed Bullfinches, Greenfinches, Goldfinches and Chaffinches. In most cases the experiments with the first two species were successful, namely, the birds built nests and laid eggs in them. Those with Chaffinches in 1969 and Goldfinches in 1972 were failures. The most abundant observational material was obtained with Bullfinches *Pyrrhula pyrrhula* (LINNAEUS, 1758) and for this reason we shall limit ourselves here to its presentation.

II. METHOD

Observations were made in 2 aviaries constructed in the garden of the Biological Station at Ojców, several metres away from the edge of the surrounding mixed forest. The aviaries are of the same height (2.5 m) and width

* 27 publikacja, wykonana w Stacji Biologicznej Zakładu Zool. Syst. i Dośw. PAN w Ojcowie. Praca wykonana w ramach problemu PAN—27, a następnie problemu M. R. II. 3.

(3 m) and differ somewhat in length (6 and 7.5 m). They are entered from a dark passage, which connects the shorter sides of the aviaries, situated in a line, and at the same time provides accommodation for observers. In addition to the doors, at various heights of the passage walls there are several openings, furnished with covers and enabling observation and taking photographs without alarming the birds. The frames of the aviaries are wooden, covered with dense netting, originally made of metal wire, later replaced with plastic net. Shrubs, young spruces, sycamores and currants as well as herbs, grasses and nettles grow in the aviaries. The withering shrubs are replaced with new ones, transplanted from the forest. The Bullfinches used for experiments were captured towards the end of winter and early in the spring in the forest surrounding the Station, where, besides, they were observed nesting many a time. After experiments the birds were freed in the summer (July-August). In most cases the captured birds were kept in small cages for some time before being placed in the aviary. At the time of observation it appeared necessary to add a small cover (1 sq.m) in each aviary as shelter from rain, especially in long periods of wet weather. Each aviary is furnished with a feeding table and a drinking-water pot. The birds are offered food in excess. Seed mixture is, as a rule, fed to granivorous birds. The Bullfinches in addition cropped buds of the shrubs in the aviary.

III. BRIEF RECORDS OF EXPERIMENTS

1969. 18 Apr. A female and — on 22 Apr. — a male are captured.

23 Apr. The birds are put out into the large aviary.

4 May. An incomplete nest found in a spruce.

19 May. The female escapes.

20 May. The nest removed for analyses and measuring, the male freed.

1970. 9 May. A male and a female are captured together and placed in a cage.

10 May. The female lays an egg in the cage.

11 May. The birds are released in the smaller aviary.

12 and 13 May. The female lays 2 successive eggs, there is no nest.

22/23 May, night. The male startled by a Tawny Owl breaks its wing.

2 June. The male climbs up the spruce, leaping from one branch on to another, and then flies down slowly.

9 June. There is still no nest in the aviary; material, consisting of moss and cotton wool, is offered.

14 June. The male flies well; a ready nest found in the spruce; moss and cotton wool not used for building.

15 June. 1 egg of the second brood; the nest measured.

18 June. 4 eggs in the nest.

20 June. 5 eggs in the nest, female broods very hard; the observer's entrance and observation at a distance of 1 m do not make her leave the nest.

30 June. The female incubates.

1971. End of April. A male and a female are captured separately and kept in a small cage.

Beginning of May. The birds are placed in the larger aviary.

13. May. There is no nest; the female drives the male repeatedly and utters calls decoying another male, which comes flying from the forest at her call and alights on the netting of the aviary.

16 May. The male from the forest is captured and released into the aviary. The birds at once keep close to each other.

20 May. The first male is ringed and set at liberty.

1 June. There is no nest.

No nesting attempts are observed till the end of the breeding season; the birds are set free.

1972. 24 Apr. A female and then a male, attracted by her calls, are captured and placed in a small cage.

About 1 May. The birds are released in the aviary.

10 May. Material, consisting of white cotton wool, red and violet (dyed) as well as black (natural) feathers, moss, dry and fresh grass, is placed in the aviary.

12 May. An incomplete nest found in a small spruce.

13 May. The female lines the nest, without using the material offered.

14 May. The first egg in the nest.

16 May. Three eggs in the nest; the female incubates.

29 May. The chicks hatch.

4 June. The last chick found dead; the nest removed.

9 June. Material of dog-hair (terrier and wolf-dog) and feathers of Crows and Rooks placed in the aviary.

19 June. The female begins to build a new nest in the same place.

21 June. The nest is ready, terrier's hair found in the lining.

22 June. The first egg of the second brood is laid.

23 June. A second egg is laid between 8 and 8.30 a. m.; the female begins to incubate.

7 July. Two chicks hatch. A piece of carcass is placed in the aviary and a few days later there are a great many maggots on it. The birds take them, among other food-stuffs, to feed the chicks with.

24 July. Both young ones leave the nest.

24 Aug. One young can fly well (measurements: wing — 83 mm, tarsometatarsus — 19 mm, bill — 10 mm); black feathers begin to appear above the bill; it is released together with the adult birds. The other young bird died several days before (drenched in the rain ?).

1974. 28 March. A female is caught.

30 March. A male captured; both are placed in a small cage.

Beginning of May. The birds are released into the larger aviary.

12 June. A nest base found in a spruce.

- 13 June. The male found dead in the aviary (killed by a weasel or Yellow-necked Mouse), the female loses interest in the nest.
- 23 June. The female is set free.
- 1976 — larger aviary
- 8 Apr. A male and next a female, called by him, are captured and immediately released in the aviary with a pair of pheasants.
- 23 Apr. There is no nest in the aviary.
- 25 Apr. At 3 p. m. an unfinished nest is in the top of a spruce; in the evening the female sleeps at the edge of the nest.
- 26 Apr. It rains all night and day; the birds are drenched and the female shows no interest in the nest.
- 27 Apr. In the morning the female gathers damp last-year grass blades and carries them to the nest.
- 28 Apr. The nest is ready but empty, the birds show little shyness and are not afraid of people or pheasants, which are still kept in the aviary.
- 29 Apr. In the night the female sleeps in the nest. At 7.30 a. m. she is sitting in the nest, later the first egg is observed.
- 30 Apr. The female spends the night in the nest.
- 1 May. Shell fragments of an egg destroyed by mice are found in the aviary.
- 3 May. Another egg is laid.
- 4 May. The female incubates 2 eggs.
- 17 May. One chick hatches.
- 18 May. The egg and chick have been eaten by mice. The nest, abandoned by the female, is removed.
- 20 May. The female starts building another nest in the same place.
- 21 May. The female breaks off dry spruce twigs and carries them quickly to the nest.
- 22 May. At 1 p. m. the birds copulate on exposed branches of a sycamore maple, several metres from the nest.
- 27 May. The nest is ready.
- 28 May. The first egg of the second brood is laid.
- 30 May. A third egg is laid. The female begins to incubate, the male is apathetic, looks ill.
- 8 June. The male dies.
- 10 June. The female stops incubating.
- 11 June. The female shows no interest in the nest, which is removed. Another male is caught, decoyed by the female and placed in the aviary.
- 12 June. The birds are seen courting. At 11 a. m. the female starts to gather material for the third nest. Material in the form of 3 separate bunches of dry twigs of spruce, fir and alder buckthorn hung on shrubs, is offered. The female breaks off mainly spruce twigs, very few fir ones and no twigs of buckthorn at all.
- 17 June. The 1st egg of the 3rd brood is noted in the ready nest.
- 19 June. Three eggs in the nest, the female broods.

3 July. One chick hatches, two eggs are addle.

5 July. Two eggs and the chick have been eaten by Yellow-necked Mice.
The nest is removed and the birds are set free.

1976 — smaller aviary

21 Apr. A male is caught and so is a female, decoyed by his calls.

The birds are placed in a small cage in the aviary.

28 Apr. The birds released from the cage into the aviary.

4 May. The branches in the top part of the spruce are tied up together to provide a better base for the nest.

17 May. Material offered: roe-deer's winter hair scattered on the floor. The female begins to build the nest, she breaks off twigs from the lower part of the spruce and carries them on to the tied-up branches at the top.

20 May. The nest is still under construction.

22 May. The female gathers the roe-deer's hair from the floor and uses it to line the nest.

24 May. The first egg present in the nest at 7.30 a. m.

27 May. The female lays the fourth egg and begins to incubate.

29 May. A daylong break in incubation (caused perhaps by mice which disquiet the female).

9 June. The male escapes from the aviary. He attempts to return to the female but cannot find a hole in the netting. He drives other males away.

10 June. The female stops incubating.

11 June. The male is recaptured and released into the aviary. The female at once begins to incubate again.

13 June. The female leaves the nest, in which there is one egg, the other ones have been eaten by mice. The nest is removed.

17 June. Another nest is almost ready in the same place.

18 June. The nest is ready, with the first egg in it.

20 June. The female stops incubating. It appears that the eggs have been eaten by mice.

28 June. The nest is removed and the birds are set at liberty.

IV. THE NEST AND ITS MATERIAL

The nests built by Bullfinches in the aviaries differ from each other in size and proportions (Table I), but they have some characters in common. In the first place, they all consist of two distinct layers. The nest base is in all cases built of loosely placed dry twigs of conifers (chiefly spruce). They are somewhat twisted, ramified, needleless twigs, varying in length, which often reaches 30 cm; some of them project beyond the bulk of the nest. In addition to twigs, single stalks (e. g. dry stems of nettles) appear occasionally in the base. The cup is built chiefly of dry grass and rootlets in a depression

Table I

Measurements of 8 nests of Bullfinches built in the aviaries of the Biological Station at Ojców in 1969—1976. Inner and outer diameters of the nests were measured twice, the smallest and the largest. As regards the outer diameter, the figure given in brackets beside the main values represents the greatest span of loosely protruding twigs, which form a „crown”. Measurements are given in centimetres

Ser. No.	Year, breeding pair and successive nest	Inner diameter	Outer diameter	Height	Depth
1	1969	6.5 × 7.5	10.5 × 12.0	7.5	5.0
2	1970	6.5 × 7.0	14.0 × 15.0 (25)	5.0	3.0
3	1972	8.0 × 8.0	15.0 × 15.0 (22)	6.0	2.0
4	1976, I:A	7.0 × 7.5	10.0 × 11.0 (23)	7.5	4.5
5	I:B	7.0 × 7.0	11.0 × 11.0 (20)	7.0	4.5
6	I:C	7.0 × 8.0	11.0 × 13.0 (22)	5.0	3.0
7	1976, II:A	7.0 × 8.0	11.0 × 12.0 (30)	8.0	4.0
8	II:B	7.0 × 7.5	13.0 × 15.0 (24)	12.0	3.5

in the middle of this base, which is of various thickness. Animals' hair is also used, but in relatively small amounts and not in all nests. The amount of material used to build each layer may be various even in the nests made successively by the same female (cf. Phot. 1). The use of spruce twigs to build the base agrees with the data on nests built by birds at liberty in Poland (the authors' own data from the Ojców National Park and from the Carpathians; GOTZMAN and JOBŁOŃSKI 1972). TACZANOWSKI (1862) mentions branches of conifers and hard stalks. In addition to spruce twigs, NAUMANN (1900) names fir and birch twigs and, according to GRANITZ (1955), birch twigs are mainly used to build the base. NICOLAI (1956) writes about both fir and birch twigs but he emphasizes that the base of each nest is built of twigs of only one tree species. Although true in most cases, this is not confirmed in full by our observations. Virtually, the material of the cups and lining in the nests observed in the aviaries did not differ from that given in literature (TACZANOWSKI, 1862; NAUMANN, 1900; GRANITZ, 1955; STEINFATT, 1944). Like HAARTMAN (1969) but in spite of the data published by BEME (1954), we did not observe feathers used for lining (even though they were offered to the birds). All this suggests that aviaries as such do not induce changes in the technique and building material used by Bullfinches and therefore that the observations on their nesting made in aviaries may be generalized.

Observation of several nests built under the same conditions indicates that the amount of material used to build both the nest base and cup is not dictated by its availability or lack (material was always in excess in the aviaries) but by the psychic or psychophysiological predisposition of the building female. This is clearly illustrated by the nests built by two females in 1976:

3 nests of female I were distinctly lower, built on a thinner base than 2 nests of female II (cf. Table I and Photos. 1 and 2).

While gathering material for the nest base, the female breaks off dry twigs. In the first experiments the use of spruce twigs may have been caused by their exclusive availability. However, having at choice dry twigs of 3 different tree species (experiments of 1976), the female chose spruce twigs, even when their bunch was attached to a tree of a different species. This indicates that the choice of material is not accidental. A comparison of the spruce, fir and buckthorn twigs offered to the birds suggests that the factor decisive of choice is not the thickness and flexibility of twigs but, above all, the roughness of their surface. In spite of the apparent looseness of the texture of the nest base, this roughness gives it its remarkable cohesion and strength owing to the catching of such twigs on each other. If the female drops a twig on the ground, she does not usually pick it up, but breaks off another. Only the material for the nest cup and lining is gathered on the ground. The female pulls rootlets of grass and herbs out of the ground.

V. SOME INTERESTING DETAILS OF THE BIOLOGY OF THE BULLFINCH

The fact that the female Bullfinch alone does all nest building has already been discussed (GEYR, 1942; NICOLAI, 1956; SCHUSTER, 1944; STEINFATT, 1944). These authors also mention that the male accompanies her while she busies herself with this activity. Our observations quite confirm this; the male follows the female when she breaks off dry twigs or gathers grass blades on the ground (Phot. 3), sings in a low voice and later flies behind her towards the nest. Sometimes he even enters the nest but never builds it. We failed to observe any males participating in incubation, but STEINFATT (1944) and WITHERBY et al. (1952) write about such a possibility, although the first of them emphasizes that this is an exceptional occurrence.

The experiments now presented show that the presence of the male in the proximity of his mate, while she is building the nest or incubating, their close mutual contact, e. g. voice communication, is necessary for breeding success. In the case of the male's death or absence from the aviary — even when he is flying outside the netting and calling at a distance of 1m from the nest — the female stops building the nest or incubating. The male's return (he was recovered and released in the aviary) stimulated her to resume incubation of the by then chilled eggs, although it happened on the 16th day of incubation and therefore at the time when the chicks should have been in the nest for 2 days (we observed the hatch of chicks on the 14th or 15th day of incubation).

In NICOLAI'S (1956) opinion, Bullfinches form permanent pairs which keep together even in winter (PFEIFER, 1952) and recognize each other from among other members of the same species even after having been separated for 6 months. Moreover, NICOLAI (o. c.) thinks that these birds, especially females, are absolutely „faithful”. Our observations seem to confirm this. In most cases the

second of the birds used for breeding was captured after it had been decoyed by the bird caught first, or both birds were captured at the same time. In 1971 the female did not accept a male captured separately and was driving him away for 2 weeks. Simultaneously another male would fly to her from the forest and when he had been caught and released in the aviary, she admitted him straightway. On the other hand, in 1976 three days after the death of her mate, with which she had had two broods, female I accepted another male and had another brood with him.

The results of our experiments show that the young fed exclusively on seeds, starting from their hatching, do not survive. In addition to seeds, the young ones brought forth in 1972 received insectile larvae living on carcass. This agrees with the data presented by WITHERBY et al. (1952) and with BENNETT's (1959) observations. In general, NEWTON (1960) also found the presence of insects in the early summer diet of Bullfinches.

In May 1970 the male had his wing broken. Observation of this bird shows clearly that he well managed to move around the aviary. However, at liberty he would undoubtedly have been much more exposed to danger from predators than other birds. The bones set very quickly and the bird could fly easily in 3 weeks' time.

The size of losses in eggs and chicks caused by mice of the genus *Apodemus* in our station seems interesting. These mice very well climb up and down shrubs and small trees, which we were able to observe in the aviaries. Occasional data from the Ojców National Park seem to suggest that the role of these mice in reducing the number of young song-birds successfully brought up, particularly the species nesting on the ground or low above the ground, is generally little known or underestimated.

Translated into English
by Jerzy ZAWADZKI

Zygmunt BOCHEŃSKI
Institute of Systematic and Exp. Zoology,
Polish Academy of Sciences,
31-016 Kraków, Sławkowska 17
Tadeusz OLEŚ
Biological Station of the Institute
of Systematic and Exp. Zoology,
Polish Academy of Sciences,
32-324 Ojców, Złota Góra 5

REFERENCES

- БЕМЕ Л. В. 1954 Беме Л. В. Семейство Вьюрковые *Fringillidae*. В кн. „Птицы Советского Союза” (под ред. Г. П. Дементева и Н. А. Гладкова). Москва, 5: 157 — 306.
BENNETT R. B. 1959. Breeding British Birds in Cage and Aviary. London.
BOCHEŃSKI Z. 1975. Dziesięć lat Stacji Biologicznej w Ojcowie. Przegl. zool., Wrocław, 19 (2): 199—203.

- GEYR H. 1942. Weiteres zu: Wer baut?. Beitr. Fortpfl. d. Vögel, Berlin, 18 (3): 97—101.
- GOTZMAN J., B. JABŁOŃSKI. 1972. Gniazda naszych ptaków. Warszawa.
- GRANTZ R. 1955. Zur Brutbiologie des Gimpels. Der Falke, Leipzig/Jena, 2 (1): 17—19.
- HAARTMAN L. v. 1969. The Nesting Habits of Finnish Birds. I. *Passeriformes*. Comm. Biol. S. Sc. F., Helsinki, 32: 1—187.
- NAUMANN J. F. 1900. Naturgeschichte der Vögel Mitteleuropas. Gera. Bd. 3.
- NEWTON I. 1960. The Diet and Feeding Habits of the Bullfinch. Bird Study, Oxford, 7 (1): 1—9.
- NICOLAI J. 1956. Zur Biologie und Ethologie des Gimpels (*Pyrrhula pyrrhula* L.). Ztschr. Tierps., Berlin-Hamburg, 13 (1): 93—132.
- PFEIFER S. 1952. Winterpaare bei unseren Gimpeln. J. Orn., Berlin, 93 (2): 172.
- SCHUSTER L. 1944. Zur Brutbiologie des Blutfinks. Beitr. Fortpfl. d. Vögel, Berlin, 20 (5/6): 132—133.
- STEINFATT O. 1944. Ueber das Brutleben des Großen Dompfaffen (*Pyrrhula pyrrhula pyrrhula*). Beitr. Fortpfl. d. Vögel, Berlin, 20 (5/6): 127—132.
- TACZANOWSKI W. 1862. Konstantego Hr. Tyzenhauza Oologia Ptaków Polskich. Opisy. Warszawa.
- WITHERBY H. F., F. C. R. JOURDAIN, N. F. TICEHURST, B. W. TUCKER. 1952. The Handbook of British Birds. London, 1.

STRESZCZENIE

Obserwacje były zbierane w latach 1969—1976 w 2 wolierach, zbudowanych w ogrodzie Stacji Biologicznej PAN w Ojcowie, o kilka metrów od otaczającego je boru mieszanego. Ptaki chwytane były w lesie w najbliższym sąsiedztwie Stacji, gdzie należą do gatunków lęgowych.

Gile zbudowały w wolierach 8 gniazd, które nie różniły się zasadniczo od spotykanych w lasach Ojcowa czy Karpat. Wymiary tych gniazd zostały zestawione w tabeli I. Ilość użytego do budowy gniazda lub poszczególnych jego warstw materiału zależy nie od jego dostępności, lecz od predyspozycji psychicznych wzgl. psychofizjologicznych budującej samicy. Podstawę gniazda stanowią suche gałązki, które samice obłamywały z rosnących świerzków. W przypadku danych do wyboru pęczków suchych gałązek świerka, jodły i kruszyny, samica wybierała głównie gałązki świerkowe, nawet wtedy, gdy ich pęczek przymocowany był do drzewka innego gatunku. Świadczy to o nieprzypadkowym wyborze gniazdowego materiału. Materiał do budowy czaszy gniazda i wyścielenia jej, w postaci trawek, korzonków itp. zbierany był przez samice z ziemi. Nie stwierdziliśmy czynnego udziału samców w zbieraniu gniazdowego materiału, budowie gniazd, czy wysiadywaniu jaj. Samiec stale jednak samicy towarzyszy (por. fot. 3) i jego obecność jest samicy koniecznie potrzebna do prawidłowego przebiegu budowy gniazda i wysiadywania: w przypadkach śmierci lub nieobecności samców, samice przestawały budować gniazdo czy wysiadywać.

Plate I

Phot. 1. Nests of the Bullfinch. Three successive nests built by female I from the end of April throughout June 1976. The third nest (C), built most quickly, has the smallest base and is most carelessly finished

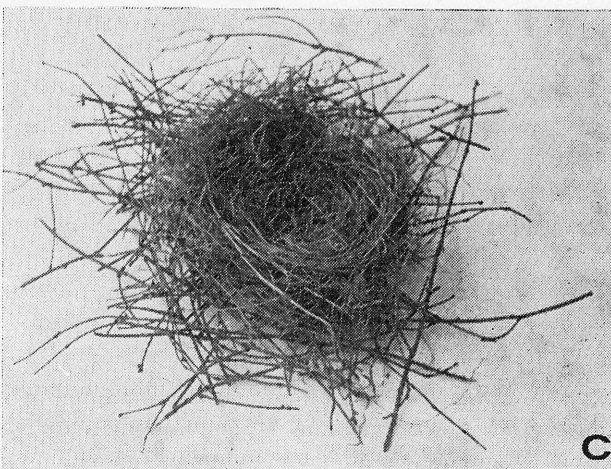
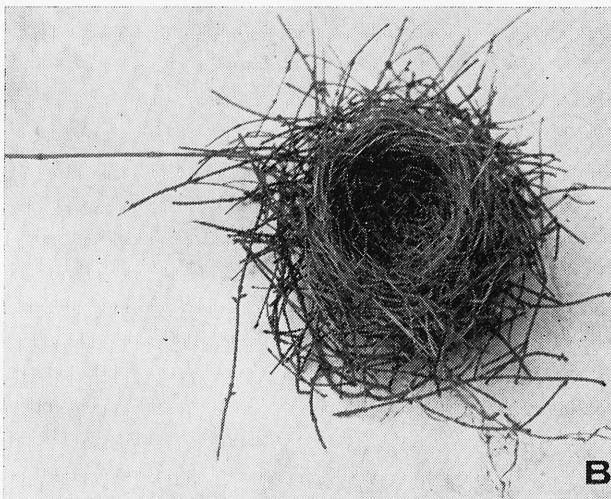
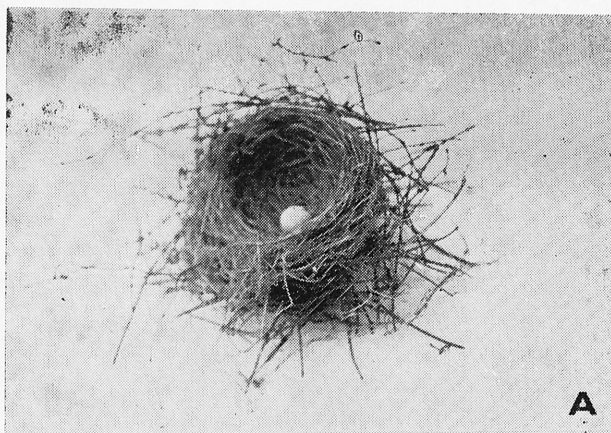


Plate II

Phot. 2. Nests of the Bullfinch. Two successive nests built by female II in May and June 1976.
The second nest (B) is built of much more material and more carefully finished

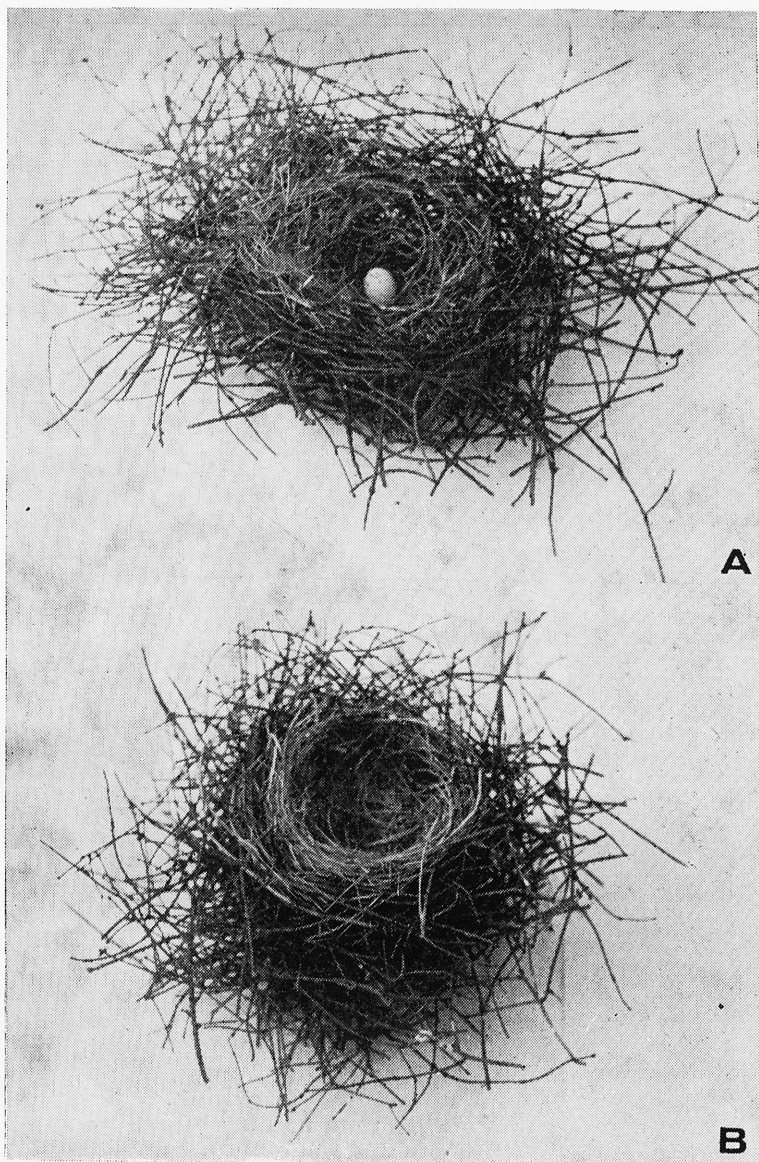
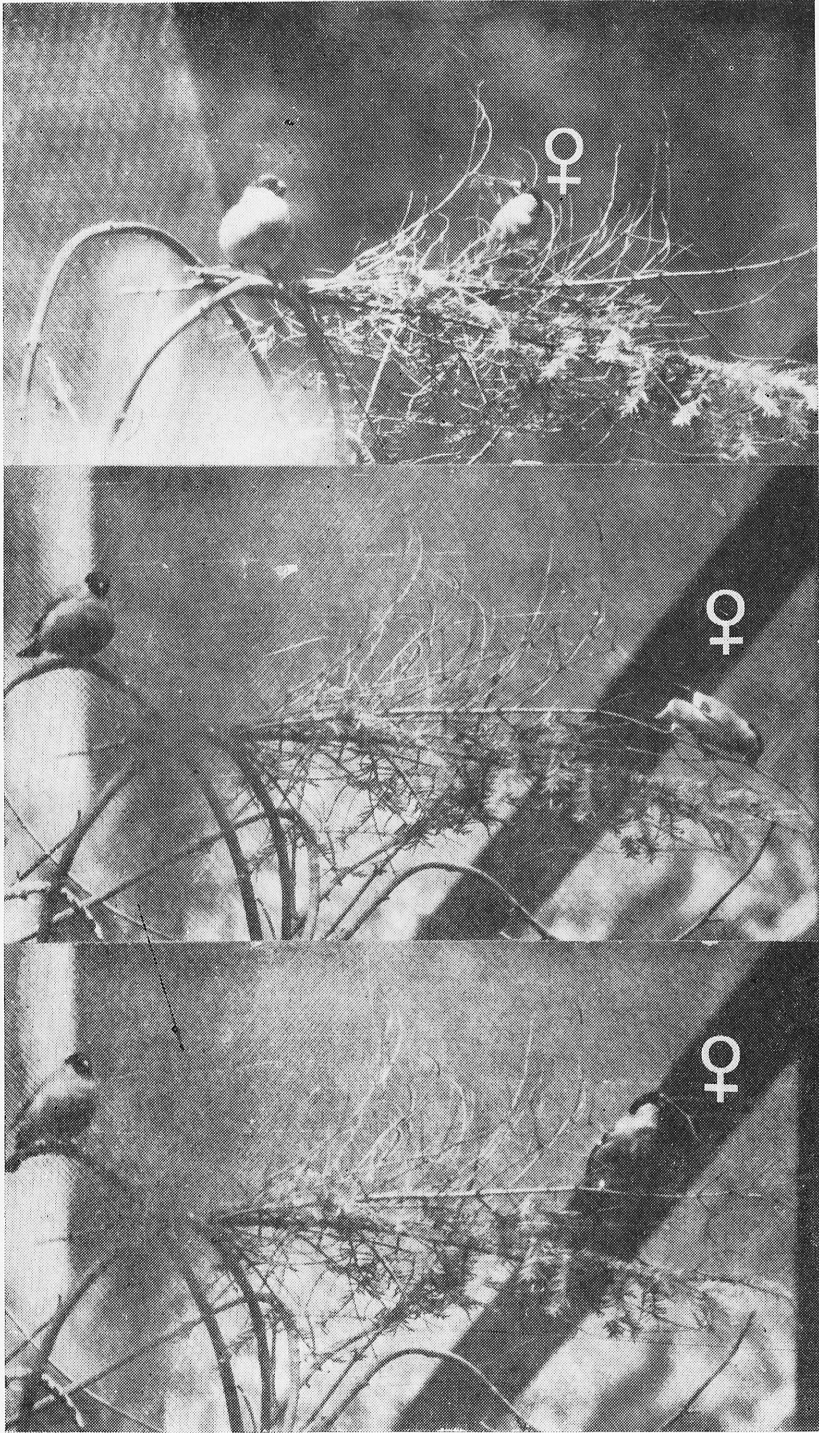


Plate III

Phot. 3. Female I, breaking off twigs for her third nest from one of the bunches offered. The male, which accompanies her, is sitting beside



Z. Bocheński, T. Olés