

THEY SHARE THE SKY WITH THE BIRDS

In everyday conversation, we often refer to airplanes as steel birds. Truth be told, the first airplanes were wooden and covered with canvas. Metal airplanes became popular in the 1930s. Today, passenger aircraft is dominated by aluminum alloys, while military aircraft is dominated by titanium and its alloys. Birds were an example of early evolvers. It soon became clear that by fagging the wings, the airplanes would not fly. That is why they imitated sailing, such as German Otto Lilienthal. The overall design of airplanes and helicopters tries to imitate the shape of birds as much as possible. The imitation of nature in technology is called *bionics*. Even today, airplane designers study birds to improve the aerodynamics of airplanes. It wasn't long before it was noticed that eagles also had some feathers at the end of their wings, in the longitudinal direction. They control flight with them. So now, after testing in wind tunnels, modern passenger planes have the ends of the wings rounded upwards or have a vertical plate added.

Therefore, it is unsurprising that aircraft designers often named their models after birds. We are most familiar with Yugoslav-made airplanes, but many airplanes elsewhere are also named after birds.

In the aviation of the United States of America, they have a habit of calling everything, formerly Soviet, now Russian aircraft, by their names. The purpose of this designation is faster communication between the radio control service and pilots. Names are specified so that the first letter of the name specifies the type of flying device. The names of fighter planes start with F (fighter), bombers with B, transport planes with C (cargo), and helicopters with H. Many of these planes were named after birds, but not all of them, because they quickly run out of bird names for new models.



Some cats travel by plane. This one prefers to fly with a bird.
Author: Nina Zhuravskaya © Illustrations Russia, translated 13. 4. 2022

Plan:

- | | | |
|-------------------------|-----------------------|---------------------------|
| 1. Birds of prey | 2. Water birds | 3. Birds around us |
| • Bird of prey 2 | • Albatross 7 | • Blackbird 13 |
| • Eagle 3 | • Flamingo 8 | • Stork 10 |
| • Condor 4 | • Goose 9 | • Raven 14 |
| • Hawk 5 | • Pelican 10 | • Cardinal 15 |
| • Goshawk 6 | • Seagull 11 | • Swallow 16 |

BIRDS OF PREY



The Lockheed Martin F-22 Raptor is a 5th-generation military aircraft produced by Lockheed Martin and Boeing. It is the best and most expensive aircraft of its type. It is intended for air combat beyond visual range combined with low radar visibility. The aircraft was ordered during the Cold War and was a response to the MiG-29 and Su-27 aircraft. (Edit: Jane's Preproduction, photo US Air)



Birds of prey are birds of various sizes, from the osprey to the mountain eagle. Here we see the mountain eagle, the biggest predator in our area. It is characterized by good sailing in circles and good vision, with which it watches out for carrion and live prey. (Edit: Paul Bivette, Zoölogen - Zürich, translated 28 November 1927)

EAGLE



The J-22 Orao (eagle) is a jet military attack aircraft of Yugoslav-Romanian production. Due to the Romanian embargo, it does not have a powerful enough engine to go supersonic, which it exceeded only when descending under full throttle. (Photo: Ivan Lank, press Gorenjski press Kring)



An eagle is a good glider, catching most of its prey on the ground by attacking from the air. He is the lord of the heights, as he lives in the highlands. He controls the terrain with circular flights at high altitudes, which gives him good vision. (Edited by: EDICIONES SICILIA S.A., photo by Eduardo Pineda)

CONDOR



The Condor II a glider is the successor of the Condor I from 1932. After World War II, the two-seater Condor IV first flew in 1951. (Edit: R. A. R. Bittner, Publishing, Pilsen, translated 1965)



Condors are the largest flying land birds in the Western Hemisphere (wingspan 3.3 m). They can sail and hover with the help of thermals and scan the surroundings for carrion. (Edit: Wien-Schönbühner Tiergarten)

HAWK



BAE Systems Hawk (SOKJ) OR Hawker Siddeley Hawk, is a British single-engine subsonic training military aircraft. It is also used by the British aerobatic group Red Arrows (aircraft pictured). (Edit: Charles Skilton and FFF LTD, photo Inaverty photography)

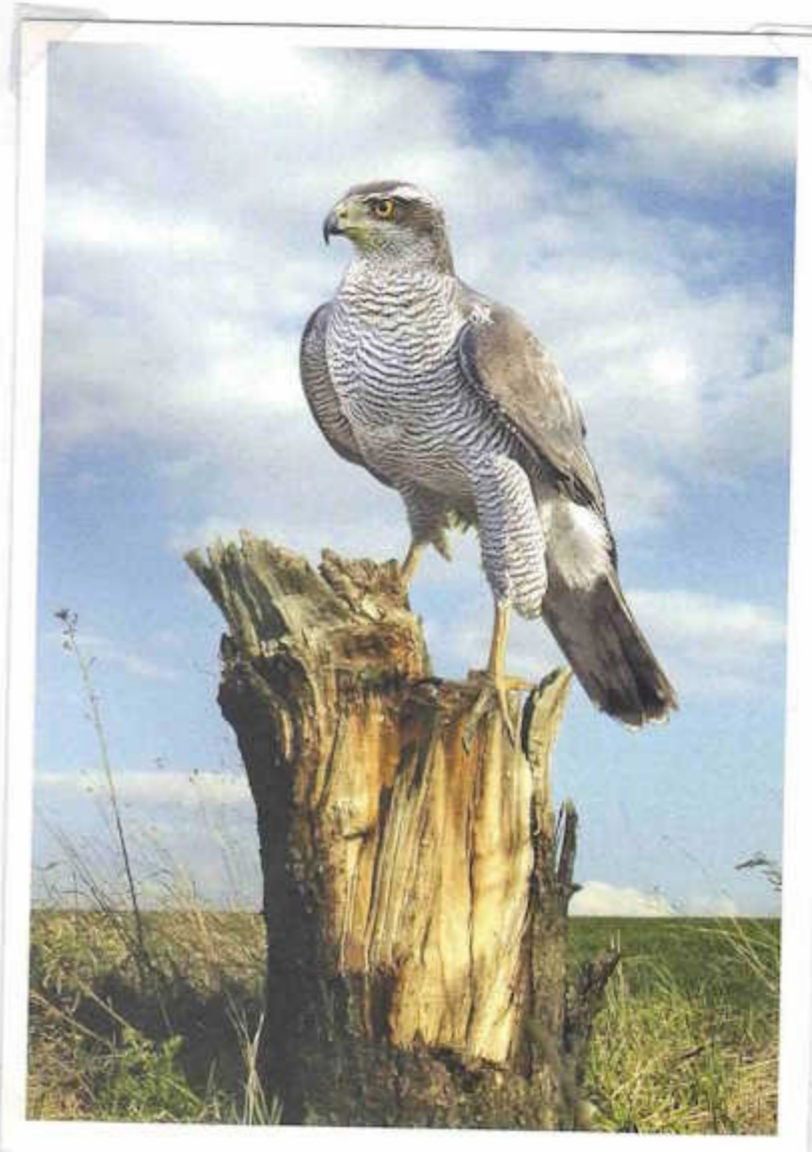


We know about 60 species of falcons. They are widespread all over the world. In Europe, the most famous genus is Falco. The peregrine falcon is the fastest animal in the world, with a top speed of 389 km/h when descending. Reminiscent of modern fighter jets. (Edit: WWF, photo: SCLC, R. Dowling)

GOSHAWK



The McDonnell Douglas T-45 Goshawk is a very modern version of the naval Bae systems Hawk for land use. The T-45 is used by the US Navy as a trainer aircraft capable of landing on an aircraft carrier. (Photo by John A. Iwanicki, photo: jostel-airtop.nl)



A Goshawk is a medium-sized bird of prey, with the female larger than the male. An adult skunk measures from 48 to 61 cm in length. In flight, it can be recognized by its rounded wings and long tail. Goshawks are not typical gliders, so they often flap their wings in flight. Its habitat is forests, in which it also nests. (Edit: Paul Robinson, photo and design: Alexander Krasovskiy 2016)

1. WATER BIRDS ALBATROSS



The Aero L-39 Albatross is a high-performance jet training aircraft of the Czech company Aero Vodochody. It was designed in the 1960s as a replacement for the Aero L-29 Delfin as the main training aircraft. (Edit: S. Salkovic, Photo: Jiri Zedka, photo: STICK s. r. o.)



The albatross is a bird of the subpolar waters of Antarctica, but it is also found further north. The great albatross has a wingspan of up to 3.60 m. He is an excellent glider, agile, and able to take off against the wind without flapping his wings once. (Edit: Cokovnik Publications 1977 Ltd, Omeira, N. Zealand, photo by Geoff R. Chingy)

GOOS



The Grumman G-21 Goose is a seaplane manufactured by Grumman and served as an 8-seater "commuter" plane for businessmen. During World War II, the Goos became an effective transport for the US military. (Edit: Mary Jager, a RedwoodSpecialties Inc ©1984, photo: Jay Salzman)



Geese are large waterfowl. But they are also good and durable fliers. These features, however, make them like large seaplanes. (photo: E. Stuhliki, Edit: Phoenix)

FLAMINGO



The de Havilland DH.95 Flamingo is a British twin-engine high-wing aircraft from 1938. During World War II, the aircraft was used by the Royal Air Force (RAF) for transport and general purposes. (Edit: Václav Štěpánek, a Post Card Ltd., printed in Great Britain)

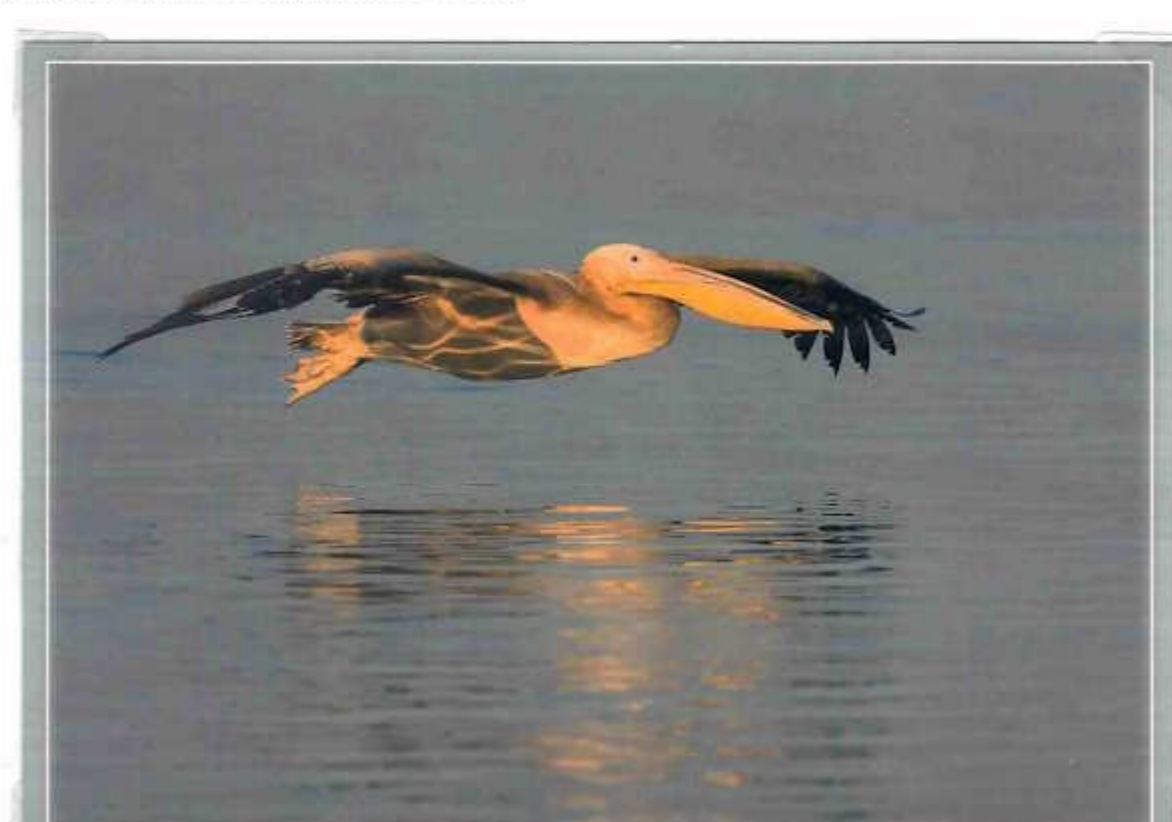


Flamingos are a type of wading bird in the family Phoenicopteridae. They are characterized by a long neck, and long legs with four toes, the last of which is stunted, and the front three are connected by skin. They feed on algae and aquatic invertebrates that live on the shores of river estuaries or along the shores of seas and lakes. (Edit: S.E.P. - 38, Illustration: Corbelli, printed in Italy, translated on 17. 06. 1962)

PELICAN



The Pelican U2M is a Swiss four-seat, single-engine aircraft with an extended transparent cabin for good visibility. It has a fixed undercarriage and is a low-wing version. The prototype flew for the first time on May 21, 1963. (Edit: Antique Airplane association, photo: Erich Gendler)

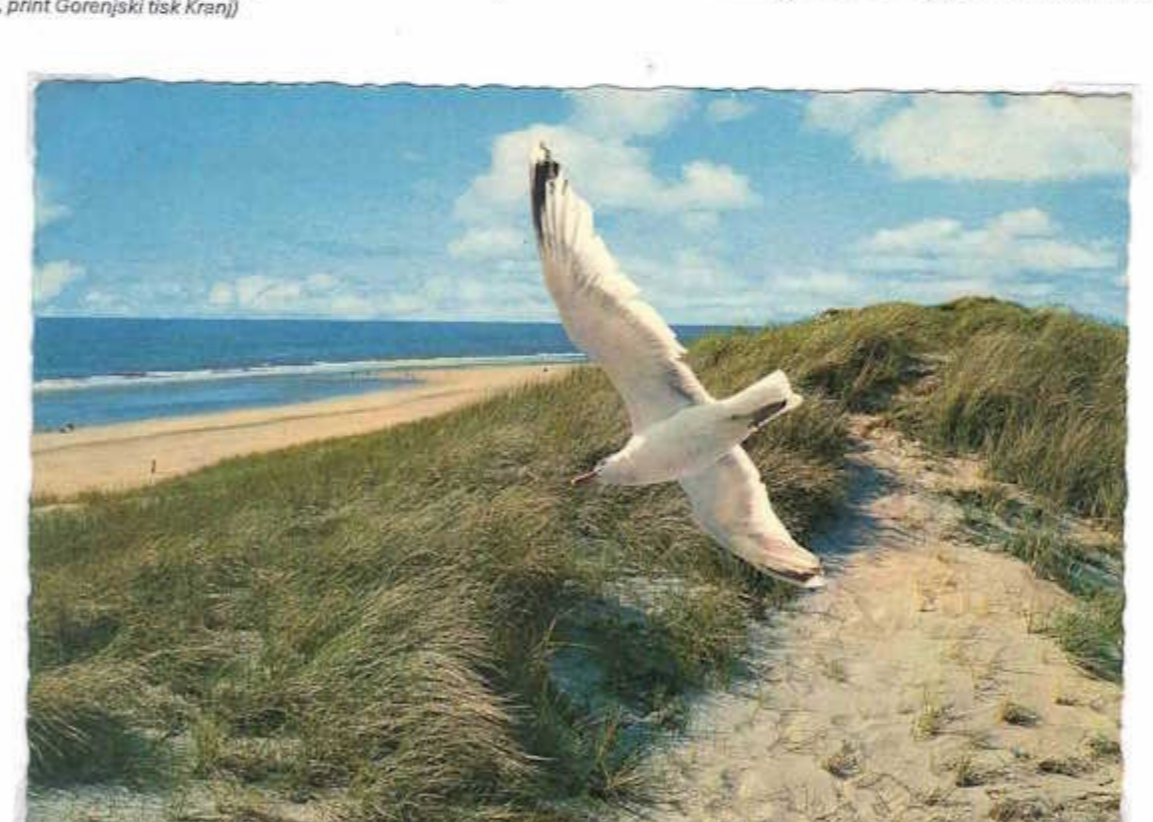


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SEAGULL



The Galeb school plane of the SOKO aircraft factory is one of the most valued school planes in the world. Out of 9 candidates, he was among the top 5 in the competition for the NATO training aircraft. He was not selected due to minor shortcomings, non-membership and later the disintegration of Yugoslavia. (Photo: Archives - JNA photo center, photo: Gorenjski tisk Kring)



Seagulls are considered excellent sailors, where we see a similarity with an airplane. But they are also good at packing and agility. (Edit: Václav Štěpánek, a Postcard, translated on 22 June 1964)

3. BIRDS AROUND US BLACKBIRD



The Lockheed SR-71, informally known as the Blackbird (Slovenian: kosa), is a long-range reconnaissance aircraft with a speed of up to Mach 3.2, which makes it one of the fastest aircraft. Due to its high speed, it is practically inaccessible to interceptors and anti-aircraft weapons. The plane got its name from its black color, which makes it less visible. (Edit: R. A. R. Bittner, Publishing, Pilsen, translated 1965)

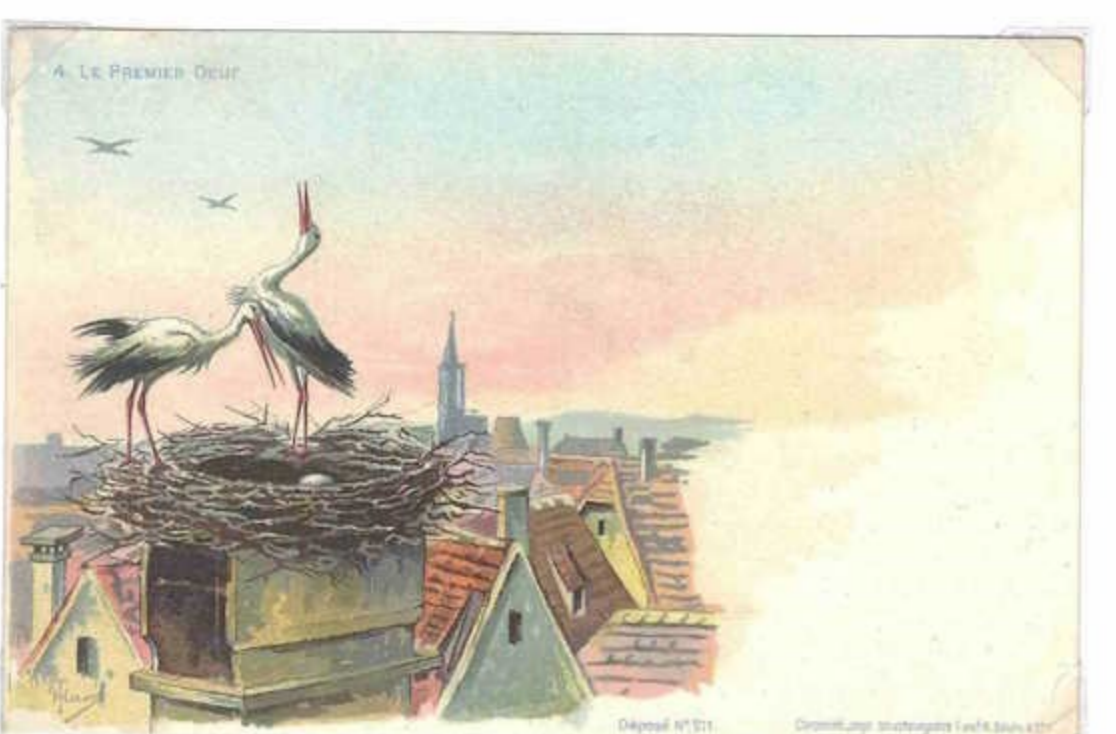


The blackbird is considered a park bird because it has exchanged forests for populated areas with trees. Only males have the characteristic dark black color and yellow beak. Females are a little more ash gray with a less intense beak color. (Edit: Papp-Wing, translated)

STORK



The Fieseler Fi 156 Storch ("Stork") aircraft was used by the German army during World War II as a reconnaissance aircraft and for the transport of mail and officer personnel. The high legs of the front wheels resemble a stork.



The stork is the most typical migratory bird of our region. It is characterized by long legs, large nests on chimneys and tower-like structures. She is a good glider and was a role model for the first glider pilots (Otto Lilienthal).

RAVEN



The EF-111A Raven is an electronic warfare aircraft of the General Dynamics - Grumman company, intended to replace the EB-66 fighter in the US Air Force. The USAF contracted Grumman in 1974 to convert some of its existing General Dynamics F-111A aircraft into electronic warfare aircraft. (Edit: AIRCRAFTS.COM, Atlanta Ga, photo by David F. Brown)

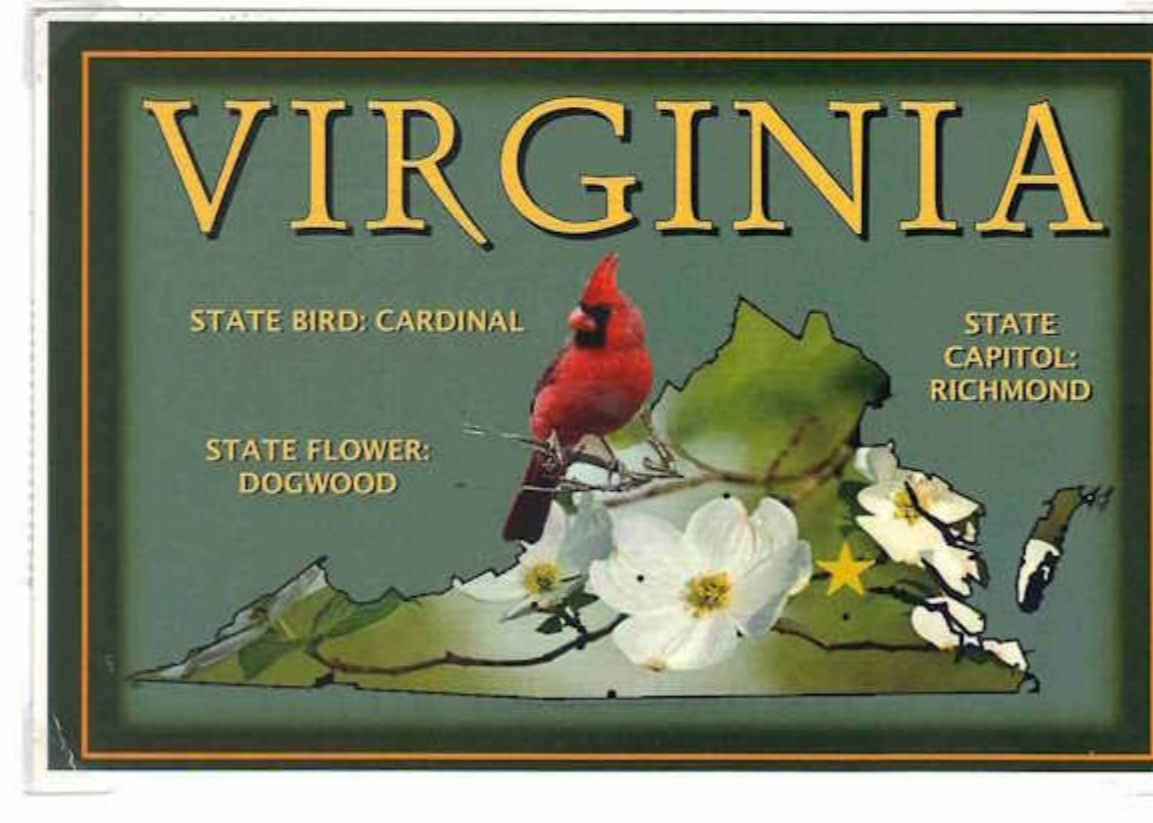


The raven is an alpine bird that belongs to the crow family and differs from the crow primarily in that it is much larger. He also knows how to sail wonderfully. The raven is extremely sociable, which is why many would like it as their pet and can learn human words. (Edit: Gorenjski Posvezniki, Wilhelms Platz, Glynning G. photo: Frank 1910)

CARDINAL



Cessna, the largest manufacturer of light business and private aircraft, also offers the Cessna 177 Cardinal model. It can be a single-engine high-wing general-purpose aircraft. It is being replaced by a Cessna 172 Skyhawk. Introduced in 1967, it was in production from 1968 to 1978.



A cardinal is a bird from the sparrow family found in America. The family is characterized by a strong beak with which they crush the seeds. Each state in the USA has its flag, coat of arms, and flowers, as well as its bird. The cardinal is a bird of Virginia state.

SWALLOW



The Lasta 95 (swallow) is a single-engine propeller training military aircraft manufactured by Litva Pančevo. It is a low-wing aircraft with a retractable tricycle-type undercarriage. The swallow can perform acrobatic maneuvers in the +6/-3g range, which is comparable to swallows. (Photo: Ivan Lank, press Gorenjski press Kring)



The swallow (Hirundo rustica) is a migratory bird, recognizable by its blue upper body, scissor tail and curved pointed wings. Because it feeds on insects it catches in flight, it is very fast and agile. (Edited by: Royal Society for the Protection of Birds, London, printed by R. S. Art press Ltd.)

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Birds were an example of early aviators. It soon became clear that by flapping the wings, the airplanes would not fly. That is why they imitated sailing, such as German Otto Lilienthal. The overall design of airplanes and helicopters tries to imitate the shape of birds as much as possible. The imitation of nature in technology is called bionics. Even today, airplane designers study birds to improve the aerodynamics of airplanes. It wasn't long before it was noticed that eagles also had some feathers at the end of their wings, in the longitudinal direction. They control flight with them. So now, after testing in wind tunnels, modern passenger planes have the ends of the wings rounded upwards or have a vertical plate added.

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Author: Rina Zeniuk Edit: Edencards Russia, travelled: 13. 4. 2022

Plan:

1. Birds of prey

- Bird of prey 2
- Eagle 3
- Condor 4
- Hawk 5
- Goshawk 6

2. Water birds

- Albatross 7
- Flamingo 8
- Goos 9
- Pelican 10
- Seagull 11

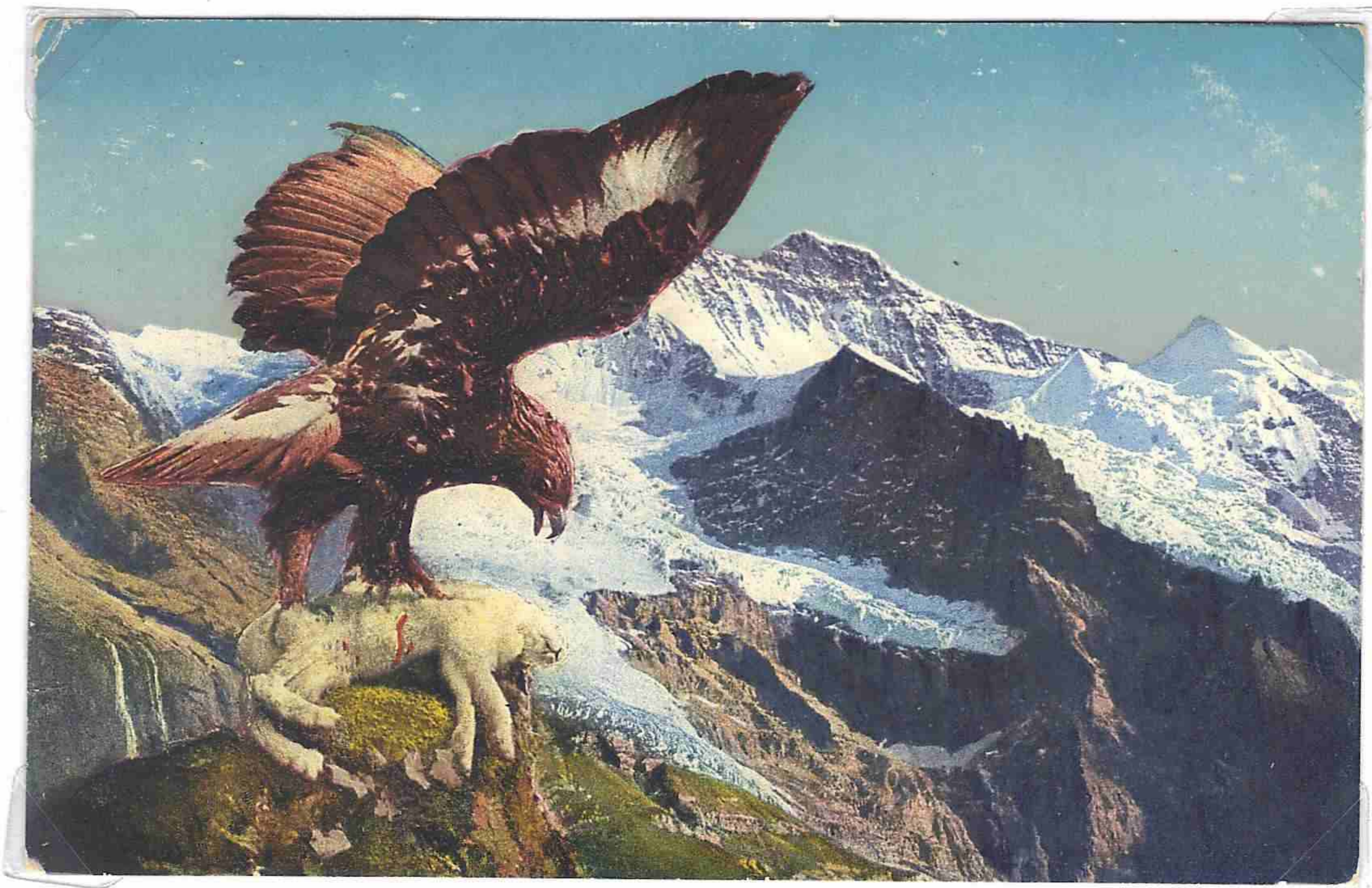
3. Birds around us

- Blackbird 12
- Stork 13
- Raven 14
- Cardinal 15
- Swallow 16

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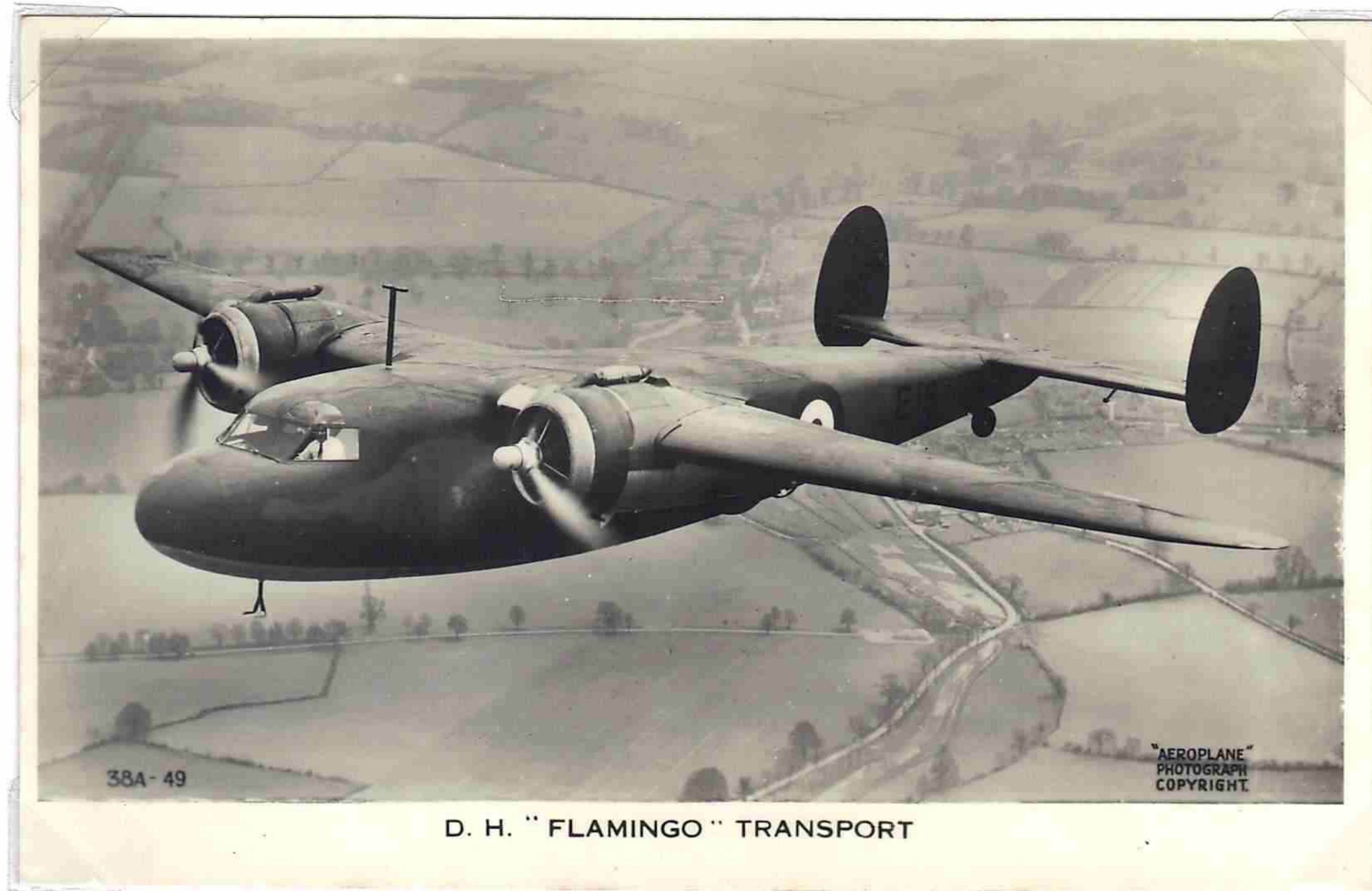


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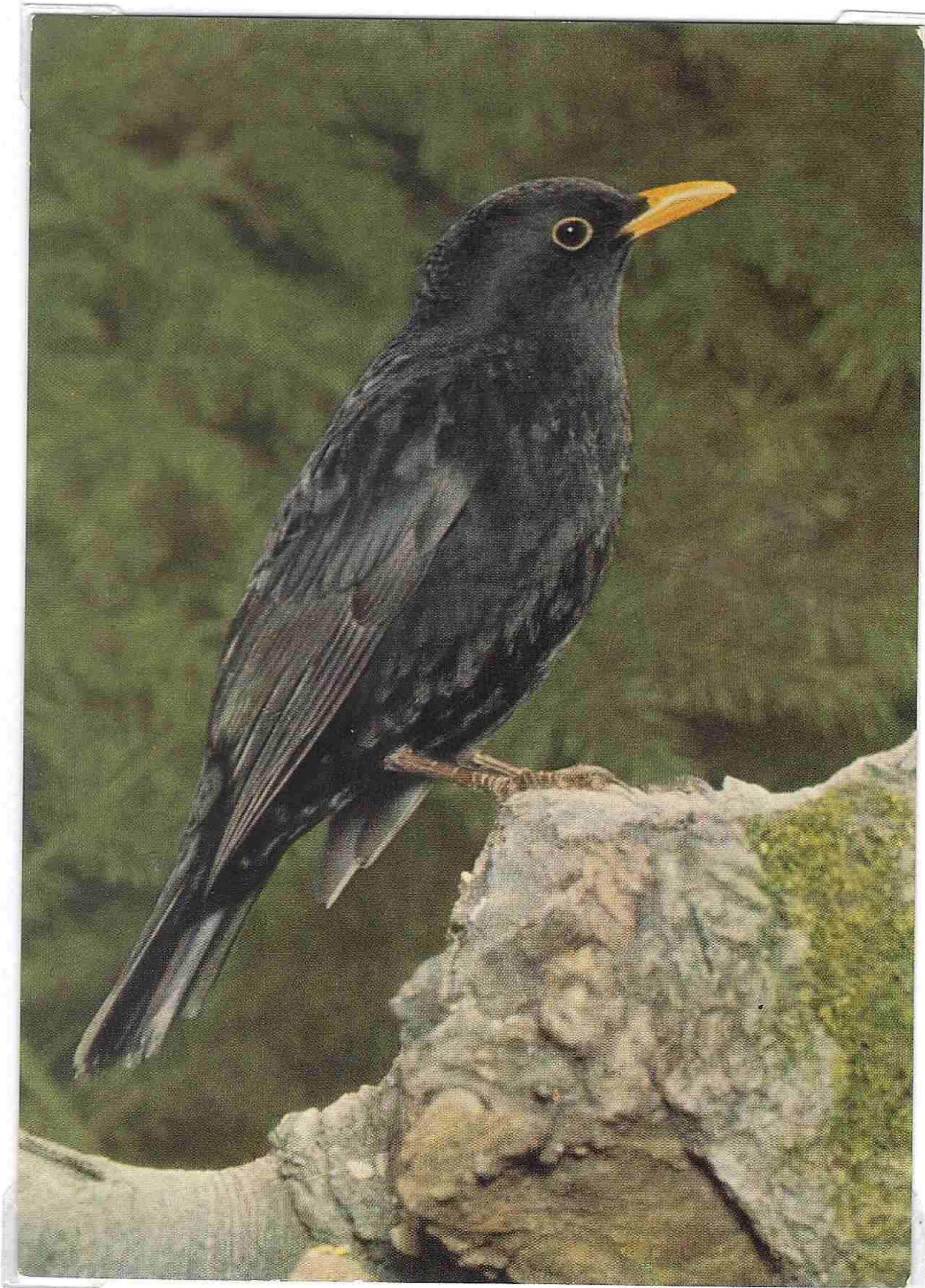


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3. BIRDS AROUND US
BLACKBIRD

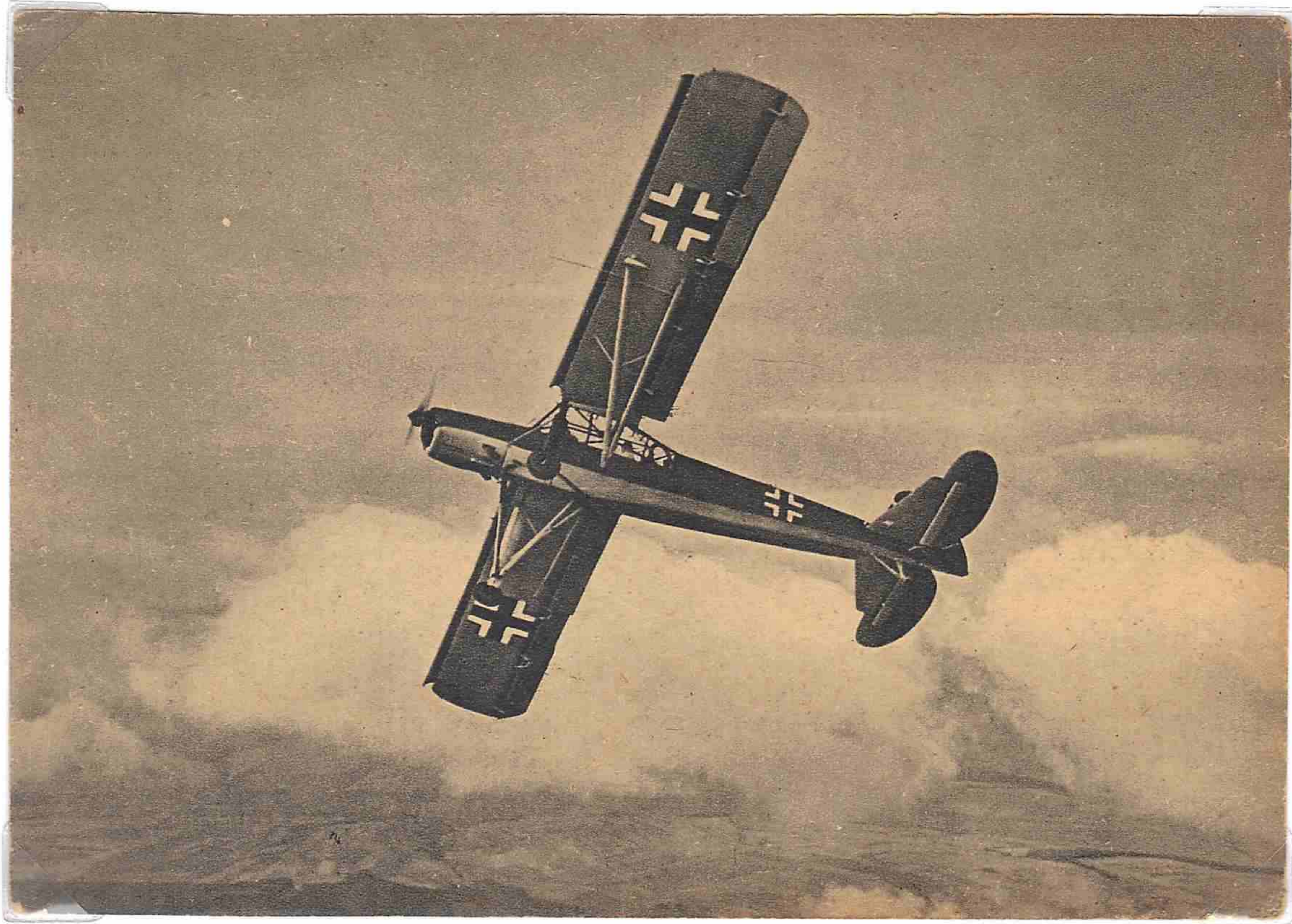


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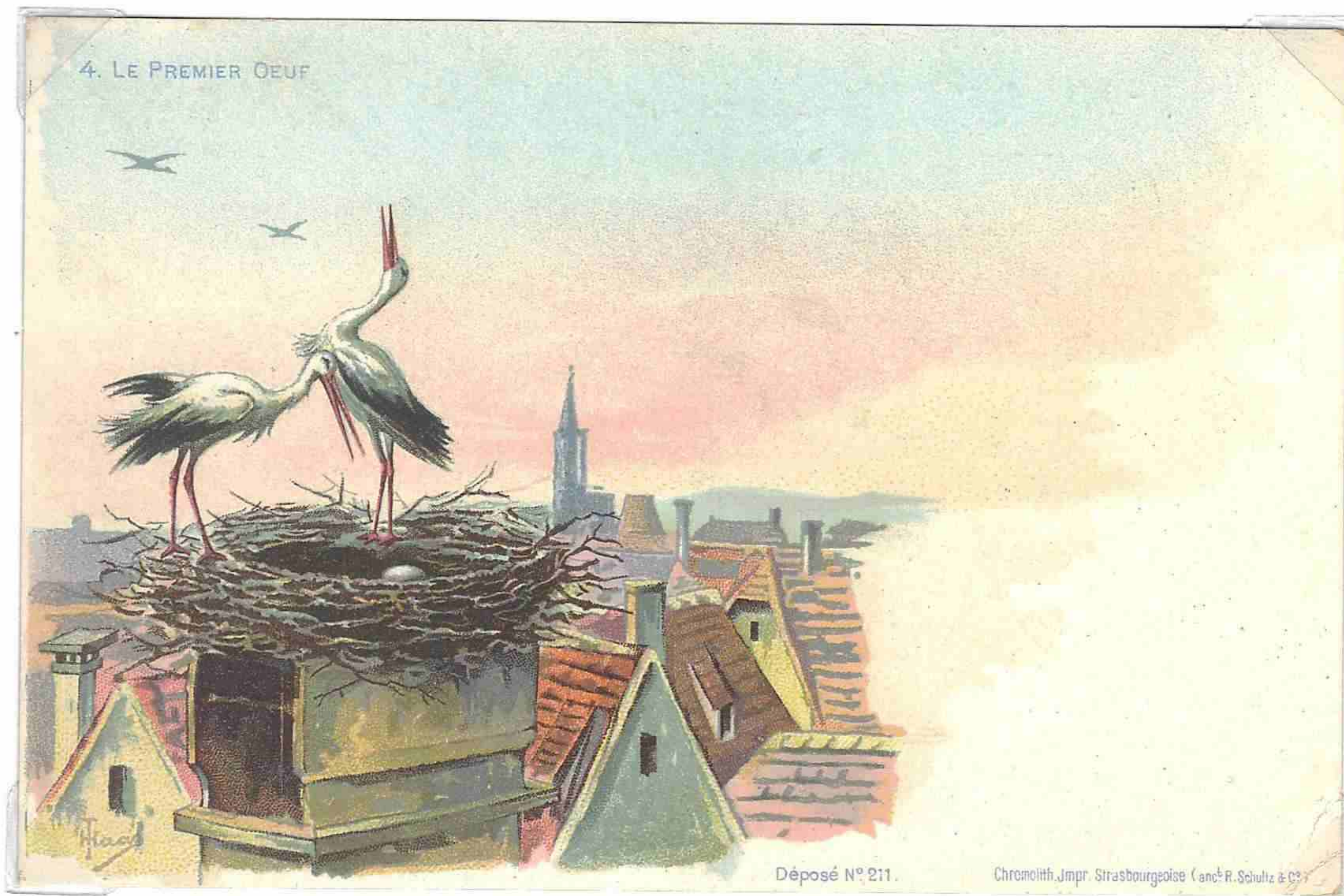


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