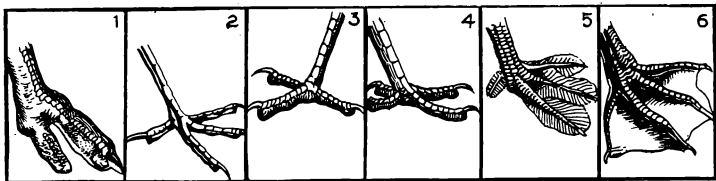


ELEMENTARY SCIENCE SECTION

SOME INFORMATION ABOUT BIRDS



OF all animals the only ones which bear feathers are birds. The feathers grow from the skin like the scale of reptiles or the hair of mammals.

Birds, with the fishes, reptiles, amphibians (animals living both on land and in water), and mammals make up that division of the animal kingdom known as *invertebrates* or backboned animals. But the backbone of a bird is very different from the backbone of other animals. This is necessary so that the bird can fly.

It is thought that millions of years ago birds developed from lizard-like reptiles. If this is true, the lizard or reptile is the ancestor of the bird. Even today there are a few similarities. Birds and reptiles are hatched from eggs. Some birds, like some reptiles, have scales, although with the bird (the chicken, for example) the scales are only on the legs where there are few or no feathers.

The differences in the structure of birds and reptiles which seem so great today have been brought about by the birds learning to fly. Birds today do not have teeth, but many fossil birds had teeth, just as their reptile cousins still have.

The study of feet among the birds tells

a great deal about their lives. Notice the sketches (on this page) of the feet of some birds. The first picture (on the left) is the foot of an ostrich. Notice that there are only two toes. Many, many years ago the ancestors of the ostrich had five toes. The other three have now disappeared because the ostrich spends so much of its time in running. The third toe has grown very big, while the fourth toe, the only other one that is left, is becoming smaller. It will probably disappear entirely, just as in the case of the horse.

The second illustration (on the left) is the foot of a bird called the apteryx. It is scaled; this characteristic was inherited from the reptile ancestor. The next two sketches (counting from the left) are pictures of woodpeckers' feet. They are arranged to give the bird a good grip on tree trunks. The first illustration on the right shows the foot of a pelican. Notice that the toes have a web between them so the bird can swim. The next sketch on the right shows the foot of a grebe, a bird which lives both on land and in water. Notice that the web is attached to each toe, but these toe webs do not join. This

(Please turn to page 422.)

BIRD INFORMATION

(Continued from page 408)

makes the foot convenient for walking, as well as for swimming.

Birds are studied all over the world. Their cheerful songs, bright colors, and many pleasing ways are all very attractive. Birds are also very valuable because they destroy many injurious insects.

The study of the distribution of bird shows some are found all over the world and others in two or more different regions, but most species of birds are found in only one geographic region.

When we study the birds of the East Indian Islands (of which the Philippines are a part), we discover some very strange facts about the distribution of birds. A part of the East Indian Islands lies in the Australian region and a part in the Indian region; the line between the two is very sharp. Thus the islands of Bali and Lombok (in the Malay Archipelago just east of Java), though but 20 miles apart, differ as greatly in their animal life as do Africa and South America. This indicates that the two islands were separated ages ago, and the deep strait between them is the dividing line between Asia and what was once the

BIRD OF THANKSGIVING

(Continued from page 409)

REVIEW

1. Where did the early colonists of America find the first turkeys?
2. Describe the turkey.
3. Tell of the habits of the turkey-hen.
4. Tell of the care of young turkeys.
5. What turkeys were the ancestors of the present domestic turkey?
6. Are any turkeys grown in the Philippines?

Australian continent. And so we find a difference in the birds of the two divisions.

There are today between 13,000 and 14,000 species of birds found in the world. These are classified and grouped, just as the books in a library are classified and placed on shelves according to their contents. Just as in the library the books are not arranged according to their size or the colors of their covers, so with birds—their classification is made according to the structure rather than upon similarity in appearance.

REVIEW

1. What is an invertebrate?
2. Is a bird an invertebrate?
3. Millions of years ago

THE PILGRIMS

(Continued from page 415)

The Young Citizen, and then answer the following:

11. Did the early colonists have sufficient food? Why not?

12. What happened to many of the colonists?

13. What kind of weather did the colonists experience?

14. To whom did the colonists go for food?

15. Did they receive food from the Indians? Why not?

16. Where had the colonists sent for food?

17. Did the food ship finally return?

18. Do you think these colonists were brave?

19. Did they develop into a great nation?

20. What nation did they become?

21. Do you think that settlement has influenced the Philippines in any way? How?

22. Read again all the Thanksgiving material in this issue of *The Young Citizen*, and then answer all of these questions. Your teacher will help you with any which present difficulty.

what animals were the ancestors of birds?

4. Tell why there is a difference in the feet of birds.