

Sandgrouse, A Review

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This article will be primarily directed toward the Pallas Sandgrouse, *Syrrhaptes paradoxus*. However, since sandgrouse are a rather obscure family, it might prove fruitful to review the family as a whole.

The family *Pteroclididae* contains two genera and sixteen species of pigeon-sized birds which inhabit the arid regions of Africa, Asia, Europe and the Middle East. It is generally included in the order *Columbiformes*, pigeons. However, recently some authorities placed them in *Charadiiformes*, shorebirds, while others give them ordinal rank. The genus *Pterocles* consists of 14 species while *Syrrhaptes* has two members which are found in the cold deserts of Asia.

Sandgrouse are compact, stocky, terrestrial birds with pigeon-like heads. The greys and browns cryptically dappled with orange, chestnut,

black and white help them melt into their semi-desert surroundings. Their short legs are feathered to the toes as in the true grouse. They are incapable of perching since the hind toe is vestigial in 14 species and absent in the remaining two *Syrrhaptes*.

Because of their extremely rapid flight and distinctive appearance resulting from their short, deep bodies and long, pointed wings, they cannot be confused with any other bird in flight. So swift is their flight, experienced observers state hunting falcons are incapable of catching them in level flight.

The usual clutch of three elliptically shaped eggs vary from buff to brown with blotches of yellowish-brown to reddish and underlying grey. The precocial young hatch covered with down and are able to feed themselves soon after leaving the nest.

Their food consists of seeds and greens, especially of chenopods and legumes.

Historically, sandgrouse have not been well known to aviculturists; thus relatively few captive breeding attempts have been made or were successful. Probably the first to raise sandgrouse was the Danish breeder Winge who, in 1892, reared the Pallas Sandgrouse. Shortly after, the English aviculturists Meade-Waldo and San Quintin bred the White-bellied, *P. albatta*, Black-bellied, *P. orientalis*, and Chestnut-bellied, *P. exustus*, Sandgrouse. In the 1960s, Dr. Frisch of West Germany again raised the White-bellied Sandgrouse, while Dr. Grummt of the East Berlin Zoo; Hans Assink, Rotterdam Zoo; and the Dutch breeder De Vries, all raised the Pallas Sandgrouse. It is to be sadly noted that, as far as is known, all Pallas in private breeders' and western zoo collections are progeny from the same importation. The last new species to be bred was the Yellow-throated, *P. gutteralis*, by Mr. L. Grueber in 1985.

Presently I am working with Yellow-throated and Pallas Sandgrouse. The latter I have bred successfully since 1983 from stock I received from the previously mentioned De Vries. The Yellow-throated have not

as yet bred since I only received them in the winter of 1988-89.

Pallas are bizarre little birds (10 ounces), inhabiting the region from the Caspian Sea to eastern Mongolia, from which they make sporadic eruptions into western Europe as far as Spain and Faroe Islands. Their habitat's extremely hostile climate has caused them to undergo several evolutionary adaptations such as thick abdominal skin, very short legs, small rabbit-like feet and one of the most efficient high speed wings found in the bird kingdom.

The Pallas are kept in a covered, unheated enclosure, each pair having an area measuring six feet by 16 feet. The Yellow-throated are kept in similar sized pens, though heated to maintain a minimum of 45 °F. It is particularly important to keep the Pallas dry at all times. The pen floors are mostly sand covered with some dirt for dust bathing and designed to allow the birds some sun each day.

Sandgrouse food requirements are both simple and inexpensive, consisting of game bird crumbles and the following seeds: milo, canary, flax, mung beans and safflower seeds. It is desirable to give them green food. Crushed oyster shells should always be available to them since their diet is low in calcium.

Pallas' courtship begins in early March at which time the males become quite amorous, pursuing the females after the manner of mallards. The female's invitation to copulate is a submissive sitting posture with the head held low and slightly stretched forward.

Egg laying commences in late March or early April, depending to a large extent on the temperature. The female lays every other day in the evening at between five and six o'clock. The male is always very near during the laying process. When one enters a pair's pen, the male will position himself between the intruder and the hen, as if to protect her. In the wild, it is normal for the female to sit during the day and the male through the night. Because Pallas are extremely high-strung birds, they refuse to sit on their eggs. It would seem such nervous birds refuse to lay. However, my birds have laid as many as four clutches during the breeding season, which extends into early July. In the wild, the normal is two clutches per season. The eggs are picked up as soon as a clutch of three is completed and placed in a still-air



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incubator with temperature maintained between 102° and 103°F with a humidity of 55%. The eggs are turned at least twice a day. The normal hatching period is 25 days. It should be noted that I have much better hatching results with a still-air incubator as opposed to a forced-air incubator. It may be that sandgrouse eggs require a temperature gradient.

After the chicks are dry, they are placed in a brooder at 99°F. In the interest of sanitation and their unique foot structure, paper towels are spread over the floor. Some people who have bred sandgrouse have indicated sandgrouse chicks are slow to start eating and require teachers such as quail. I have found my Pallas start eating immediately if small seeds are spread over the floor of the brooder.

In the wild, the male brings water to the chicks in his belly feathers. Because of this trait, care must be taken to ensure the chicks are given water until it is certain they drink on their own. Some breeders use pipettes or soaked cotton swabs to give the birds water. I stick their bills into the water and make certain they swallow the water. I continue this for three or four days, or until they are able to drink on their own. They remain in the brooder for at least five weeks or until such time I feel they are strong enough to be outside.

In summary, I feel the following conditions should be met if one is to breed sandgrouse:

1. The aviary must contain at least one area that is always dry;
2. If possible, their enclosure should contain some plant material for green food and privacy;
3. Their aviary should be located and arranged to receive maximum sunlight;
4. The primary feathers of at least one wing must be clipped to avoid serious injury;
5. The aviary should be clean since sandgrouse may be susceptible to intestinal or fungal infection because they are not exposed to these conditions in their native environment;
6. They should not be overcrowded;
7. The aviary should be large enough to allow the birds to obtain a degree of privacy and should contain a dirt area with small rocks spread throughout in which the birds may take dust baths. ●

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