Aberdares. Thousands of *Agapornis* are held in transit in Nairobi each year for the export market, and the dealers admit loss by escapes.

I feel it is hardly possible that such a conspicuous species as *A. fischeri* could have been overlooked so many years by ornithologists such as J. P. Benson and Col. R. Meinertzhagen, who collected over years in the Meru-Isiolo areas. For the birds to turn up suddenly in a most unlikely environment, having "jumped" some 350 miles across hostile terrain seems hardly credible. Nevertheless it is remarkable that these new feral populations have been able to adapt to a very diverse range of conditions, coastal to Kenya highlands, where hitherto they were unknown. The evidence against the specimen taken in Kenya being a natural wild bird is far too great, and it is my contention that the specimen from Isiolo does not constitute "an addition to the avifauna of Kenya" and the record cannot stand or be accepted.

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Orientation of entrances to woodpecker nest cavities.—Several students have tried to determine the factors that influence the orientation of entrances to woodpecker nest cavities. Reller (1972) in Illinois found that most nest entrances of the Red-headed (*Melanerpes erythrocephalus*) and Red-bellied (*Centurus carolinus*) Woodpeckers faced southwesterly. She suggested that this orientation increased both ventilation by the wind and warming by the sun, possibly easing the adults' incubation duties during cool weather.

Bent (1939) gave detailed measurements of a Hairy Woodpecker's (*Dendrocopos villosus*) nest in a leaning tree with the nest opening on the underside of the trunk. Bent stated that Pileated Woodpecker (*Dryocopus pileatus*) nest entrances usually faced east or south, and suggested that the wood quality and slope of the trunk probably had an additional effect on orientation. Kilham (1971) reported that the search image of Hairy Woodpeckers for possible nest sites was the underside of curved limbs and that cavities excavated at these sites were more easily defended.

During 1972 and 1973 I located 78 nest trees of the Red-headed, Red-bellied, Hairy, Pileated, and Downy (*Dendrocopos pubescens*) Woodpeckers and Common Flicker (*Colaptes auratus*) within a 40-mile radius of Blacksburg, Montgomery County, Virginia. I measured nest trees to determine whether the nest openings pointed above or below the horizontal. None of the measured cavity entrances was in a vertical trunk; 77 nests opened on an angle below the horizontal (Fig. 1)—i.e. faced downward. Only one cavity entrance, that of a Red-bellied Woodpecker, faced slightly upward. One-way analysis of variance failed to detect a significant difference in angles of openings among species.

More than twice as many nest cavities opened in a northeasterly direction, from north-northwest to south-southeast (Fig. 2) than southwesterly. Prevailing winds blow from the southwest and tend to be funneled along the north-northwest west-southwest oriented ridges and narrow valleys, but tree lean of nest trees and non-nest trees was more closely associated with the slope of the ground than with the prevailing wind direction. Most trees leaned downhill, though many trees were irregularly shaped and portions of their trunks often did not follow this general rule. Where the ground was relatively level, usually along water courses, tree lean was mostly a phototropic response. Although many trees or portions of trees leaned southwesterly, most nests were oriented northeasterly. This evidence conflicts with the findings of Lawrence (1966) and Dennis (1969). Most of the nest entrances of these studies were oriented southeasterly, and both authors favored the explanation that sun warmth aided in the success of the nest. The study areas of Lawrence and Dennis were in Ontario and Massachusetts respectively. Baker (1971), who also favored the sun warmth theory, found that most nest entrances of Red-cockaded Woodpeckers (*Dendrocopos borealis*) in Florida were oriented southwesterly. That most nests in my study (lat. 37° 20′ N) faced northeasterly suggests that factors other than sun warmth were the actual determinants of nest orientation.

My evidence suggests that the slope of the trunk appears to be the most important factor in nest orientation. The tendency of nests in other studies to be oriented in a certain direction might result from the fact that most of the nest trees leaned that way because of regional geotropic or phototropic influences. The Red-cockaded Woodpecker may be an exception to this generalization because

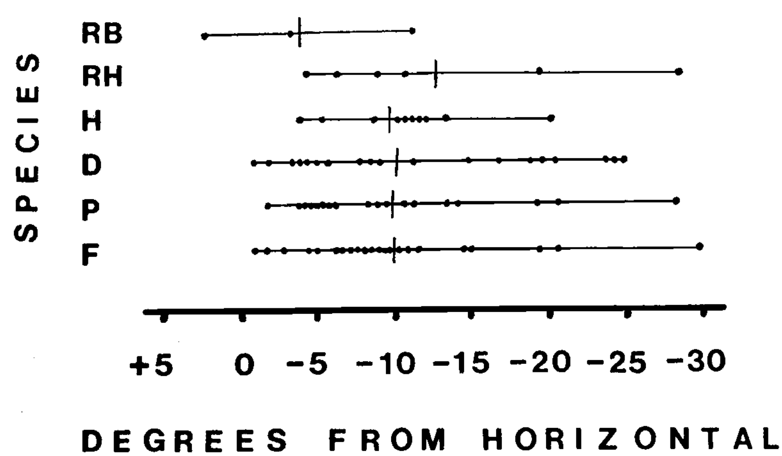

Fig. 1. Orientation of woodpecker nest cavity entrances expressed as angles from the horizontal. Species symbols as follows: RB, Red-bellied; RH, Red-headed; H, Hairy; D, Downy; P, Pileated; and F, Flicker.

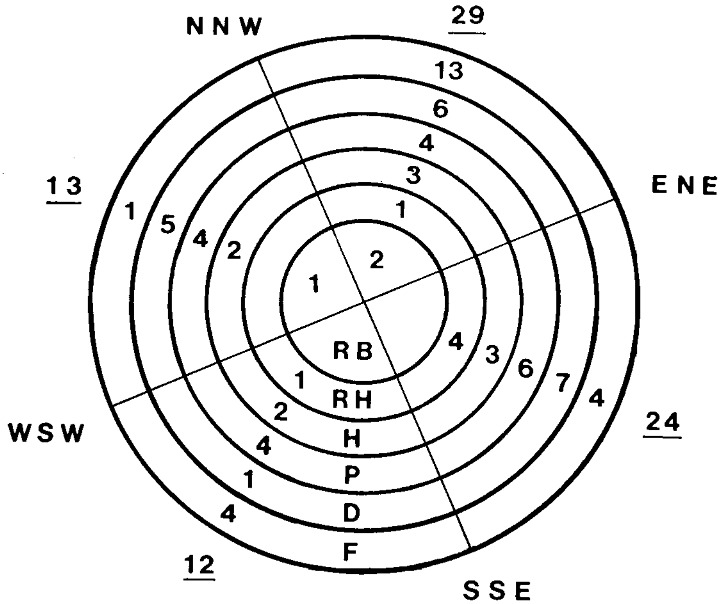

Fig. 2. Compass aspect of woodpecker nest entrances.

it depends on sun warmth to keep sap resins around the entrance hole sticky and flowing as a defense against predators (Dennis 1971, Baker 1971).

Nest openings that face even slightly downward tend to prevent rain from entering the cavity. Strong winds can drive rain into any cavity, but the chances of this are lessened as the downward angle of the nest entrance increases. Dennis (1971) reported several instances where Pileated Woodpecker nests were filled with water, but made no mention of nest tree lean.

Other factors may influence the choice of nest sites in woodpeckers. For example, rainwater flowing down the trunk (stem flow) might enter nest cavities, but nests excavated near the top of dead snags would be less affected by stem flow. In any case, gravity would prevent stem flow from entering nest cavities with a substantially downward facing opening.

Fungus growth in trees may be still another factor influencing nest orientation. The underside of a leaning tree trunk is usually a moister microenvironment than the upper side. The moisture, as Blume (1961) and Dennis (1969) suggested, might favor fungus growth that would soften the wood fibers and make easier excavating for woodpeckers on the underside of a sloping trunk. In addition, heart rot, as Kilham (1971) described in a study of Yellow-bellied Sapsucker (*Sphyrapicus varius*) nest tree preferences, may produce a thinner layer of firm lignified wood on the underside of tree trunks than on the upper side.

Two major factors may favor those pairs selecting nest sites on the underside of a leaning tree trunk or branch. A nest opening that points moderately downward affords protection from rain as well as aiding in defense of the nest. Any predator or competitor that tries to gain access to the nest entrance is at a disadvantage. Thus a combination of factors may favor pairs that excavate nest cavities in sections of trees where the entrance faces slightly downward. Nests that deviate are less defensible, may fill with water, and possibly require more energy to excavate, thus decreasing the contribution of such pairs to the gene pool. In this part of Virginia an additional advantage may accrue to those pairs excavating northeasterly oriented nests because of shelter from wind and rain.

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An evaluation of the supposed anhinga of Mauritius.—From the Quaternary deposits of the Mare aux Songes on the island of Mauritius in the Indian Ocean, Newton and Gadow (1893) described a species of small anhinga as *Plotus nanus*, based on a left humerus, a left tibiotarsus, and a fragmentary pelvis, now in the Zoology Museum of Cambridge University. A left humerus lacking the distal end, from superficial black earth near Sirabé (= Antsirabe of modern usage), central Madagascar, was referred to this species by Andrews (1897). Both of these records appear in Brodkorb (1963) under the name *Anhinga nana.* While I have not reexamined the specimens themselves, the illustrations accompanying the descriptions of these bones are more than adequate to establish that all of them are from a small cormorant (*Phalacrocorax*, sensu lato) and not from an anhinga.

Some of the differences between the humeri of anhingas and cormorants were noted by Miller (1966), who, in a similar instance, found a small humerus from