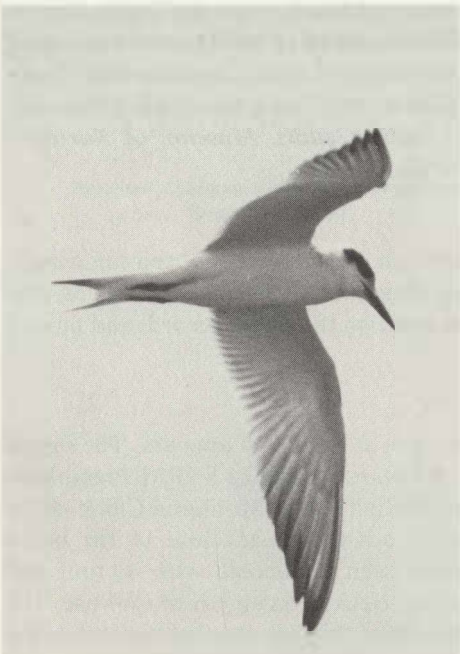
behaviour has been observed might mean that tool behaviour is not a regular behavioural trait among these chickadees. Further, the fact that the species in any case works with wood to excavate its nest hole means that opportunities to employ a splinter as an implement must have occurred many, many times. And yet the species (like, apparently, the vast majority of the world's birds) has not become a tool user. This in turn suggests that only in exceptional circumstances is the use of an external object a more parsimonious path for natural selection than the evolution of body structures or other behavioural traits to solve the same problem. Thus when we come across a lone observation of a species apparently using a tool, we are tempted to ask is the explanation that — to word it teleologically — it is an experiment that doesn't pay off?

I used to think that the fragmentary nature of much of the data on tool using by wild birds was due to inadequately-systematic observation, and no doubt this *may* to some extent be the explanation. I now think that the observers may have been witnessing some "errors" in a process of trial and error learning. Two other individual instances of parids (two Blue Tits *Parus caeruleus*) using a piece of vegetation as a poker or prod are given in my 1977 paper (p. 150), as are *single* instances of individual birds of six other passerine species using an elongate object as a probe. Of these three were seen to succeed. But even success with a "new" method of food extraction need not mean that the behaviour pattern will be "taken up" as part of a species' behavioural repertoire. It may still be a less economic method of foraging. It must be added that there is of course one bird species well known regularly to employ a probe, and at least two others that are almost certainly regular in their use of such an instrument. — *Jeffery Boswall, Birdswell, Wraxall, Bristol BS19 1JZ, England.*



The challenge in the preceding issue featured this tern, photographed at a southern beach in autumn. Can you identify it to species?

Answer to Snap Judgment 6

KENN KAUFMAN

Terns always seem to sort themselves out quite neatly on the field guide plates, where they are all laid out for comparison, but a single individual in the field or in a photograph can be much more difficult. Terns afield are often mere flickering white shapes over the marsh, refusing to sit still for scrutiny. Terns in photographs are all too frequently caught in positions that fail to show off the "field guide" characteristics. The bird in our "Snap Judgment" photo is an example of the latter.

To begin narrowing down the choice: the bird is clearly one of the medium-sized white terns. Size is impossible to judge directly, of course, in a photo of a lone bird against the sky, but we can judge proportions. Our mystery bird does not appear long-bodied, long-necked, large-headed, or heavy-chested enough to be one of the large species; it is not dark enough to be one of the black terns *Chlidonias,* nor is it sufficiently petite in proportions to be a Least Tern *Sterna albifrons.* Some other peripheral possibilities such as Sooty *S. fuscata,* Bridled *S. anaethetus,* and Aleutian *S. aleutica* terns can be ruled out by the pale coloration of the bird in the photograph.

Thus, the field is narrowed to a group consisting of Common *S. hirundo,* Arctic *S. paradisaea,* Forster's *S. forsteri* and Roseate *S. dougallii* terns. The Gull-billed Tern *Gelochelidon nilotica* might also merit consideration, but we would expect the Gull-billed to appear heavier-bodied, rounder-headed, and much larger-billed than the tern in the photograph.

Some of the "field guide characters" are inoperative here. The bill simply appears dark (not surprisingly in an autumn tern), and it is difficult to be certain of the head pattern because of the angle of view and the strong sunlight reflecting off the bird's dorsal surface. However, we can clearly see the pattern of the *underside of the primaries,* and this quickly rules out two of the four prime suspects. The Arctic Tern has a very distinctive underwing pattern: the primaries are quite translucent (thus appearing very white from below in good light) with black tips which create a narrow, sharply defined black trailing edge to the outer wing, unlike the pictured bird. The Roseate Tern is also eliminated, since it would lack even the ill-defined dark trailing edge to the wing shown by the tern in the photograph. The remaining candidates, Common and Forster's terns, can both show a broad trailing edge to the outer primaries, blackish in Common and pale gray in Forster's. The tern in the quiz photo seems to lean toward Forster's in this regard, but the effects of light may be tricking us here; we need to consult other characters for confirmation.

My next instinct is to look at the shape of the head and bill. Bird guides do not mention this point (and, admittedly, it should not be used as a diagnostic character), but Common and Forster's terns typically differ in the profile of the forehead and bill. Forster's has a flat crown, a gently rounded forehead, and a rather thick bill; the forehead of the Common slopes up to a rounded peak just behind the mid-point of the crown, and its bill is thinner and more tapered than that of Forster's. The difference is subtle (and subject to variation as the bird raises or sleeks its head feathers) but it provides a helpful clue, and in this case it suggests the tern in the photo is a Forster's.

Thus we have two votes in favor of Forster's, but not quite enough evidence to secure the final verdict; a diagnostic character is needed. The *tail pattern* is worth considering here. A Common Tern at any age should show a dark outer web to the outermost rectrix, appearing as a narrow dark edge to the tail; and we can clearly see that there is no such dark edging on the near side of the tail. This evidence emboldens us to believe that what we are seeing of a suggestive head pattern (specifically, white across the nape) is genuine and not merely an artifact of lighting. The bird is definitely a **Forster's Tern.** It was photographed at Puerto Penasco, Sonora, in late autumn 1979 by Dr. Robert A. Witzeman.