



This computerized image of an Anna's Hummingbird symbolizes the computer's increasing role in the world of birding.

THE COMPUTER: OF DREAMERS & DATA BASES

by Robert Eisberg

HAVING DECIDED TO GO BIRDING tomorrow, you connect your portable computer *via* telephone to the ornithological database run by a United Nations environmental monitoring group, and request hotline information for your county. It tells you that two interesting species have just been seen at the lake: a flock of occasional visitors, and a vagrant that would be a life bird.

Next morning you drive there, with binoculars and computer. Soon

spotting the occasional visitors, you estimate their number and enter the sighting in your own database. But for the vagrant you need help and ask the computer to show you its diagnostic identification marks, sound its call, and describe its behavior. When you think you have found it, the computer confirms it by playing twenty questions with you. Then you joyfully enter the sighting into your own database and onto your life list. Before going home, you enter some sightings of other species that are around.

After lunch you reconnect to the United Nations database. It absorbs your days' sightings, weighting their accuracy with its own measure of your past accuracy. Next, it gives your database a nomenclature and taxonomy update since this year's meeting of the American Ornithologists' Union check-list committee which took place last week. Four

species renames and one species "lump" are put in your master names file and all your previous sightings are renamed or reordered. Then you ask for an update of the North American species range information that you use for trip planning. This takes some time as range information is quite detailed and changes in it are frequent.

After dinner you browse through your database displaying the sightings and comments of several memorable trips and then of your favorite species. When mellow enough, you display your North American life list to assess the damage that the unwelcome "lump" has done to your chances of exceeding the reporting threshold this year, 2002.

Then the alarm clock rings.

That afternoon you describe your vivid dream to a friend who is a crack birder and a professor of com-

puter science. She thinks that in the not-too-distant future it will all be possible. This is so exciting you vow to learn more about using computers in birding, and ask her to describe what they are capable of doing now.

She says that, with the proper software, computers can predict where and when to look for particular species, or which species might be seen in particular regions and seasons. But there are problems in keeping up-to-date the information needed to do so. With different software, computers can provide twenty-questions identification help useful to a beginning birder.

Other software makes it easy to enter in a computer the species seen and circumstances in which they are seen, then later extract from this sightings database anything desired. She tells you that most existing birding software focuses on sightings database management since it is very useful and can be done very well.

Your friend also tells you that the following items should be considered when choosing a database manager:

There are two types. The first stores all sightings data in a single computer disk "file." The second stores different features of those data in several different but related files. This type, called a relational database manager, has the advantage of using much less space on the disk.

An important consideration is the maximum number of sightings a database manager can handle. If it is too small, then some time after you begin entering sightings you will suddenly find you cannot enter any more.

Also important is whether a database manager protects the sightings data from becoming obsolete.

One potential obsolescence problem results from changes in bird names and taxonomy. If you have



Already birders are using computer programs of varying sophistication to enhance their record-keeping and overall enjoyment of birding.

been using software that does not allow you to easily incorporate the changes in all the sightings you have already entered, then whenever there is a name change, or a lump, or a split, you will have lost all the work expended in entering now-obsolete data.

Another such problem comes from the tendency of birders to expand their territory. Even if you start off as a purely North American birder, there is a good chance that the lures of the neotropics will become irresistible. But if you have put your North American sightings

in a database manager not flexible enough to let you later add sightings from elsewhere, you will regret it.

Armed with the caveat that great care should be exercised in choosing software, the following review of six IBM PC software packages should help you make a wise choice.

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