BIRD CONSERVATION IN MIDDLE AMERICA

REPORT OF THE A.O.U. CONSERVATION COMMITTEE, 1972–73

THE Committee on Conservation has been charged in 1973 with the preparation of a report on Middle America. The next A.O.U. checklist will include all of North America south to the Colombian border of Panama. It is appropriate for members to be aware of conservation problems south of the U.S. border. Middle America has a rich avifauna; a relatively small area supports more bird species than all of America north of Mexico. The status of bird populations reflects the stability of their habitats. It is often more constructive to publicize the plight of an endangered species than it is to dramatize a vanishing habitat. Birds have a popular appeal that may be used effectively to promote conservation efforts.

The major problems adversely affecting birds in Middle America are an excessively high human population growth rate and a consequential increase in the rate of disappearance of original habitats. People must be fed; the temporary solution is the clearing of forests to provide agricultural tracts. But the land is rarely suited for agriculture and at best can be used for only a very few years before it erodes away or is so depleted nutrionally that it takes years to recover. More land must then be converted to agriculture. Habitat destruction is also brought about by logging or clearing to establish grazing lands. In some regions chemical pollution is highly destructive, particularly through large-scale use of pesticides. These are the basic problems; they are present in each of the Middle American countries.

This committee considered compilation of an up-to-date list of endangered and seriously threatened bird species. Although some species will be mentioned in this report, the fact remains that we do not know enough about population levels of many species. Some birds are known only from one or two specimens; a list of the species believed to occur in very small numbers would be very long. Such a list must ultimately be prepared, but this report emphasizes the severity of the disappearance of native habitats. The Smithsonian Institution in 1966 hosted a symposium dealing with the effects of habitat changes upon bird life in northern Latin America. The proceedings of the symposium were published in 1970 (The avifauna of northern Latin America (H. K. Buechner and J. H. Buechner, Eds.), Smithsonian Contrib. Zool. No. 26./viii + 119 pp.). The 41 participants stressed the seriousness of depletion of native habitats, and this still remains the greatest conservation threat in Latin America. Forests, particularly wet ones on the mountains, are disappearing at an alarming rate, but all other habitats are also undergoing adverse changes.

A.O.U. members must keep in mind that Middle America consists of eight countries, each with its own set of social and economic problems. These countries are not wealthy; for many of their peoples, life is a matter of day-to-day subsistence. Thus many conservation practices have little meaning. It is difficult to explain why bird species should be protected, or even what habitats should

be preserved unless some direct economic benefit results. Furthermore many Latin Americans resent being told what they should do by their wealthier neighbors to the north. Even when money accompanies the recommendations, acceptance is not automatic. The people of Middle America possess a fierce nationalistic pride, and have over the years become somewhat apprehensive of the intentions of North Americans.

In the following discussion, the situation in some Middle American countries is considered in depth. The absence of comment about a country implies neither the lack of conservation problems nor the presence of organized conservation efforts. The basic problems outlined above are common to all Middle American nations.

COSTA RICA

Costa Rica occupies a pivotal position with respect to conservation in northern Latin America. The region-wide problems of population growth and habitat destruction are as acute there as anywhere in the hemisphere. In addition, several problems are largely peculiar to Costa Rica (or at least more pressing there), for which the U.S. is in some way responsible. On the other hand, there is a small but vigorous and growing conservation movement that can already claim several solid achievements, and this offers a real hope that much of the country's rich biological heritage can be preserved. But the forces opposing such preservation and wise land-use practices are still far stronger, and are backed by dollars as well as Costa Rican colones. The conservation movement thus needs all the help it can get. If the efforts in Costa Rica should fail, then the outlook for the rest of Latin America is bleak indeed.

The problems.—The disappearance of original habitats through logging, agricultural practices, and pasture production are major problems. Until recently, Costa Rica had the highest population growth rate in the world, and at present some 50,000 ha (123,000 acres) of forest are cut each year in a country no larger than West Virginia.

Unfortunately the problem of habitat destruction is aggravated by external forces arising from Costa Rica's unusual relationship with the United States. Long one of the most friendly nations toward the United States, Costa Rica's strong democratic tradition and relatively stable economy have combined to produce a fertile field for the investment of foreign (particularly U.S.) capital. One of Costa Rica's major exports is beef, and the chief market is the U.S. The market is expanding and has resulted in an influx of U.S. cattlemen and in the investment of much U.S. capital in Costa Rican cattle. All too often the Americans (and the local politicians and businessmen who frequently join them in such enterprises) are only interested in short-term monetary gains rather than sustained yields, and are busily converting large tracts of forest into pasture. Many of these areas are unsuitable for long-term use as pasture, but this sort of habitat destruction is difficult to stop because of the powerful financial backing. Hopes of quick wealth are usually stronger persuaders of government officials than considerations of future generations.

Real-estate development and speculation is also backed by large amounts of U.S. capital. Wealthy retired American couples provide the major market. At least five retirement communities are now in the planning or building stages and others are on the way. These developments run the gamut of financial responsibility and awareness of conservation problems and practices. The worst of these developments is that on the Osa Peninsula in southwest Costa Rica. Plans include the destruction of large tracts of mangroves and other forest, and the draining of a large palm swamp, one of the last refuges for a number of endangered species of reptiles and mammals.

American capital is also pouring into the tourist and resort business. One U.S. investor is trying to buy land in one of Costa Rica's national parks to build a hotel-marina complex. A beautiful swamp forest would be drained and cut in the process, and Costa Rica's only living coral reef would be heavily disturbed if not completely destroyed.

Both international loans and American capital are slated to go into major programs of channelization and irrigation in the Tempisque basin of northwestern Costa Rica, presently the most extensive center for water birds of all kinds in Middle America.

These details on the problems in Costa Rica are cited to illustrate the complexities of the situation. The problem of habitat destruction by the slash and burn agriculturalist is compounded by the involvement of large scale operations backed by American capital; the problems are not all of Costa Rica's own making.

Preservation of representative habitats will contribute significantly to preservation of many bird species. But four species are in danger of country wide extermination: Harpy Eagle (*Harpia harpyja*), Solitary Eagle (*Urubitornis solitarius*), Crested Eagle (*Morphnus guianensis*), and Lesser Goldfinch (*Spinus psaltria*). The first three are large birds of prey, now very rare, that are taken for skins and pets. The goldfinch is in serious danger from the cage-bird trade. Other birds such as the Scarlet Macaw (*Ara macao*), Great Currasow (*Crax rubra*), other large eagles (*Spizaetus ornatus, S. melanoleucus*), and the Yellow-tailed Oriole (*Icterus mesomelas*) are severely endangered but persist in at least one refugium. Quetzals (*Pharomachrus mocinno*) are protected, as are the first three named large eagles.

Progress.—Costa Rica is making a strong effort in the direction of conservation. There is a strong and expanding system of national parks, and several local groups are becoming increasingly active in expanding the scope of conservation in Costa Rica. The major emphasis of most conservation groups is on preserving natural habitats and biotic diversity. Because many international conservation organizations are still species-oriented, the presence of spectacular or endangered species in these natural areas does provide a means for obtaining funds from such organizations.

The Forestry Law of December 1969 created the Costa Rican Dirección Forestal and the Servicio de Parques Nacionales. This gives the Dirección Forestal the power to establish national parks and reserves by executive decree. Once created, no park can be partitioned without approval of the Asamblea

Legislativa. The Servicio de Parques Nacionales can expropriate lands, charge fees, and make and enforce laws against trespassing and other violations.

A study by FAO (Food and Agriculture Organization of the United Nations) and IICA (Instituto Interamericano de Ciencias Agrícolas) in 1968 recommended five areas to be set aside as national parks or biological reserves. This was done in 1970, and national parks were established at Volcán Poás, Punta Cahuita, Tortuguero, and Santa Rosa. The Biological Reserve at Cahuita, established privately in 1965, was transferred to the jurisdiction of Parques Nacionales in 1970. Under the energetic and astute leadership of Ing. Mario Boza, the Servicio de Parques Nacionales has weathered a series of political storms within the government and is now stronger and more active than ever, with greater financial and administrative independence within the Ministerio de Agriculture. For his outstanding work in Costa Rica, Ing. Boza was one of five young parks administrators given special awards at the Second International Congress of National Parks in September 1972.

At present a small but hardworking group of Costa Ricans and Peace Corps volunteers is engaged in the arduous tasks of developing the existing parks and exploring and designating sites for new parks. Facilities for tourism and accommodations for researchers are presently available at Poás and Santa Rosa; Tortuguero and Cahuita can supply primitive accommodations and minimal research facilities, and are as yet little developed for tourism. Mapping and inventories of flora and fauna are at an advanced stage in Poás and Santa Rosa; the coral reefs at Cahuita have recently been surveyed, but the terrestrial flora and fauna are much less well-known. Tortuguero is the largest and most isolated of the national parks, and its flora and fauna are the least known. All of these parks contain considerable areas of undisturbed forest of their respective types, as well as successional habitats. Cabo Blanco is at present classified as a reserve and is being kept completely undeveloped.

In the search for sites for future national parks and reserves, several organizations are playing major roles. Besides the Servicio de Parques Nacionales itself, the most active of these groups has been the Tropical Science Center. The center, in particular L. R. Holdridge and J. A. Tosi, has long pioneered the causes of conservation and wise land use in Latin America. At present the Tropical Science Center has a grant from the World Wildlife Fund to locate and survey potential park areas in Costa Rica; the ornithological part of these surveys is being done mainly by Alexander Skutch. The center has been especially active in the efforts to establish a biological reserve on the Osa Peninsula. The help of other scientists is being enlisted from time to time in these surveys, which are being made in close cooperation with the Servicio de Parques Nacionales.

Three sites are presently being considered seriously as future national parks or biological reserves that should be of great interest to ornithologists: Cerro Chirripó, the Pacific side of the Osa Peninsula, and several tracts in the Tempisque basin.

Cerro Chirripó is the highest mountain of southern Central America, with a well-developed páramo habitat and magnificent montane oak forests. Several biological surveys have been made, and a preliminary bird list of the area is

available. A master plan for the proposed park has been drawn up and presented to the Asamblea Legislativa. Several other groups and individuals have given freely of their time and effort in the attempt to establish a national park on Chirripó, most notably Alfonso Mata of the Club de Montañismo of the Universidad de Costa Rica. Particularly encouraging has been the reaction of the local governments and the people of nearby towns, who have given their enthusiastic support to the project and have voluntarily formed associations to defend the lower bounds against hunting and deforestation. This is a dramatic demonstration that intelligent public relations can bring the local populace of an area to aid, rather than hinder, the establishment of parks and reserves.

The problem on the Osa Peninsula is not population pressure or deforestation at the present time, but rather the ambitious and ill-considered plans of an American land developer and speculator. The forests of the Osa support perhaps the only remaining Harpy Eagle population in Costa Rica, as well as the only large population of Scarlet Macaws. Some 20 species and subspecies of birds are endemic to the humid-forested regions of southwestern Costa Rica and adjacent Panama, in which Osa Peninsula is the only extensive tract of virgin forest remaining.

Efforts are underway to convert the government forest lands on the Osa into a reserve, but the most important area to conserve is owned by the Osa Productos Forestales Lumber company, and the American developer has an option to purchase. This area, the Corcovado basin, contains magnificent lowland forests and a large swamp, which would be cut and drained respectively. Currently conservation efforts are focusing on the Corcovado basin, which as a potential biological reserve has the advantages of definite topographic boundaries and no human population pressure at present. Several international conservation organizations have expressed interest in helping the cause, notably IUCN. IICA, in particular Waldemar Albertín, has furnished much assistance in biological and human occupation surveys of the Osa, and has been instrumental in enlisting the support of the Instituto de Tierras y Colonización (ITCO) of the Costa Rican government for the project.

The Tempisque Basin is, as mentioned above, the richest area for water birds in Central America. An extensive system of marshes, lakes, river bottoms, islands, mudflats, and mangrove swamps presently provide habitat for a wide variety of species, several of which occur nowhere else in Central America. The Tempisque Basin is also an important wintering area for waterfowl and shorebirds that breed in North America. Here the problem is working out viable arrangements with local cattlemen for preserving the wetlands. The proposed program of dams, irrigation, and channelization could also have disastrous effects on water bird populations. One major difficulty is that a system of reserves would be needed, as the bird populations of the area are highly mobile. Badly needed at present is a good region-wide study of the ecology, movements, and requirements of these birds; until such is made, concrete steps towards preservation of the most critical areas will be impossible.

A major problem for any National Parks system, especially in Latin America, is that of protecting the land once it has been set aside. This problem is clearly

recognized by the Servicio de Parques Nacionales, and other groups connected with the program of parks and reserves. Every possible effort is being taken to protect existing parks, none of which is without at least on-the-spot guards. In the establishment of new parks, areas are being chosen that (a) have no human population pressure at present, and (b) have discrete natural boundaries that can be surveyed and defended. Also, strenuous efforts are being made to enlist the efforts of the local populace in support of the parks, in some cases with considerable success. One difficulty is that many of the funds for national parks come from international foundations, most of which are much more willing to contribute to the initial purchase of land than to its maintenance and protection.

Several other groups figure importantly in the conservation effort in Costa Rica. The most effective may well be the newly-formed Asociación Costarricense para la Conservación de la Naturaleza. This organization aims at bringing the ideas and goals of conservation to local people at the grass-roots level through the educational system, and in forming a lobby for conservationist legislation in the Asamblea Legislativa. If conservation is to succeeed here, public opinion must be mobilized in its favor, and ACCN, under the leadership of Sergio Salas and Adelaila Chaverri, is already hard at work in this area. Another new group, Amigos de la Naturaleza, includes members from many Latin American countries. Formed with the help of the National and Florida Audubon Societies, Amigos will seek to channel U.S. capital into conservationist causes, in particular bird protection. As yet it is too early to assess the effectiveness of the organization. Other organizations that have given active support to conservationist causes in Costa Rica are the Colegio de Biólogos and the Club de Montañismo of the Universidad de Costa Rica. Although several individuals connected with the Organization for Tropical Studies have provided help in some projects, and OTS courses have visited Santa Rosa, the organization as a whole has given only token verbal support for local efforts at conservation.

A somewhat unique conservation effort is underway at Monteverde that is of particular ornithological interest, as it involves a tract of exceptionally fine subtropical forest that supports thriving and accessible populations of the Quetzal and Black Guan (*Chamaepetes unicolor*). Monteverde itself is a colony of American Quakers founded some 30 years ago; a large tract of community land has been held in forest as watershed protection. To protect this land against increasing pressure from surrounding areas, the local residents and the Tropical Science Center have formed a land holding corporation, and are seeking funds to purchase neighboring tracts to give the area more definable (and protectable) boundaries, and to build a small laboratory to encourage scientific research in the area. George Powell has been especially active in establishment of the reserve, and also in studying the local avifauna; he and several collaborators have compiled an excellent annotated bird list of the area, which has already been the site of considerable ornithological research.

Finally, the Instituto Costarricense de Electricidad has become very interested in watershed protection. ICE maintains a watershed reserve at Tapantí and is considering other sites. The current drought in Middle America may have

good effects in the long run; the value of maintaining watershed forest preserves is becoming exceedingly apparent!

Mexico

More persons from the United States and Canada visit Mexico than any other Middle American country. The tourist trade pours over one billion dollars annually into Mexico. Thus many visitors have seen first hand the magnificent scenery and exotic birds of the northern tropics. But few visitors have seen characteristic forest species, unless they have made a special effort to find forests. The trees have been removed to provide grazing land or an agricultural plot for a rural family.

The problems.—Harm to wildlife through habitat change far exceeds all other causes combined. Many bird species can exist in only one habitat type and cannot adjust to new man-made situations; thus the most seriously threatened species are the ones restricted to a single forest type. For example, cloud forest is a special habitat type, restricted in extent to certain local, humid mountain areas. Clearing for agriculture and for coffee growing, and logging, are depleting a few years, then additional land must be cleared. The problem perpetuates cloud forest habitats at an alarming rate.

Lands cleared for agriculture by rural families may support crops for only itself. In some places agrarian reform has caused the relocation of families in marginal agricultural areas. Thus even some abundant habitat types such as desert scrub and thorn scrub are being abused.

Many birds are taken each year for the pet trade. Much of this demand has originated in the United States. So long as a market exists, the trade will flourish.

Shooting any animal large enough to eat is a common practice, and one difficult to condemn when people are hungry. But today, many families raise chickens, turkeys, and ducks that they prefer to sell, rather than eat; a lack of meat protein no longer can justify year-round killing of birds. Laws exist to regulate hunting, but are poorly observed and inadequately enforced.

The killing of birds by individuals recognizing game laws poses no problems. But the majority of the small children in Middle America have slingshots and kill birds for sport. Perhaps this practice threatens no species; the birds killed are the common adaptable species that increase in numbers with the clearing of the land. But the practice is indicative of the general lack of an esthetic appreciation of birds and lack of respect for animal life.

Little evidence exists to define the actual effects of herbicides and insecticides upon bird life. But in many situations large scale spraying in cocoa and coffee plantations appears to have adversely affected populations of small birds. In extensive agricultural regions, spraying (as on cotton) virtually eliminates all animal life there, and the residues are carried to the rivers. A reduction in the number of scavengers (vultures, caracaras) is well documented in some parts of the country and would appear attributable to chemical misuse.

Several large and conspicuous birds are now so rare they are in danger of extinction. Quetzals have been depleted by commercial hunting, especially to

provide taxidermy mounts. Although legally protected, some are still taken and their cloud forest habitat (to which they are restricted) is disappearing. Horned Guans (*Oreophasis derbianus*) are rare and also confined to cloud forest. They are not shy and are easily killed when encountered. Even macaws (*Ara macao* and *A. militaris*) are endangered and it may be too late to aid the Imperial Ivorybill (*Campephilus imperialis*).

Attention should be focused on the wildlife resources of the Gulf of California, as well as to vanishing mainland habitats. A number of very large seabird colonies exist in delicate balance with their environment on isolated islands. Extensive commercial fishing and development of the area for tourists may endanger these colonies in the near future. There is a need to designate sanctuaries and protect them from increasing human interference.

The progress.—Mexico has had regulations protecting many forms of wildlife for years; and there are a number of national parks. Funds have been inadequate either to enforce hunting laws or manage parks.

Efforts in the state of Chiapas are especially commendable. There a governor sympathetic to the conservation cause has worked closely with concerned citizens and projects are underway to establish natural reserves in at least one tract of each different habitat.

More biologists are being educated at the University of Mexico. Some will enter government service and hopefully will effect changes in conservation practices.

The federal government has created a bureau charged with controlling pollution. The public is now much aware of the smog problem, especially in Mexico City, and some Mexican doctors are objecting to biocides because of their effects on humans. The government has begun tree-planting programs in some denuded areas.

PANAMA

The problems.—Clearing of forests again constitutes the major conservation problem. And, as in Costa Rica, clearing for pastures on a large scale is a growing menace. One lease agreement calls for clearing of 122,000 ha (301,000 acres, or about 1.4% of the entire country) of forested land in eastern Panama (Darien), and with no provision as to the condition the land will be left in at the end of the lease. Panama gets the lumber. The capital for clearing these huge tracts is coming from Great Britain and other "developed" countries that have run out of land on which to raise beef.

Colonies of Brown Boobies (*Sula leucogaster*), frigatebirds (*Fregata*), cormorants (*Phalacrocorax*), and egrets (*Egreta*) on the Pearl Islands are threatened by tourist pressures. With the exception of one large island, total desertion of these large colonies is likely within 4 years.

Not only are highland forests being removed, but much lowland forest will be permanently under water through building of dams to provide potable water and hydroelectric power. The last extensive areas of old lowland forest, presently preserved in the Canal Zone, share the uncertain future of the Canal Zone. In particular the forest around Gatun Lake provides a watershed important in

maintaining the water level in the lake (a part of the Panama Canal). Even now pumping salt water into Gatun Lake is being considered; the ecological consequences could be disasterous.

The present government is constructing new roads across Panama to the Atlantic side. The roads are probably inevitable, as is the cut-and-burn agriculture that follows.

Bird species dependent upon forests are threatened. With the exception of east Panama, forest between 900 and 1,400 m (3,000–4,500 feet) is almost gone. Quetzals are "protected," but one dealer shipped out 150 individuals in 1972.

The progress.—Cerro Campana is the only national park. There is no forest service to protect it and its future is most uncertain. Conservation laws exist but are inadequately enforced.

Other Countries

Other Middle American nations share the basic problem of habitat destruction.

Guatemala protects the Quetzal and the Atitlan Grebe (*Podilymbus gigas*). In fact, conservation has received good publicity, aided much by the efforts of Jorge Ibarra. Guatemala has excellent conservation laws. A start has been made and now there is the difficult problem of enforcing them.

Nicaragua has the special problem of the preservation of the Pearl Kite (*Gampsonyx swainsonii*), which is confined to the Pacific slope of the country and does not seem to be abundant.

Honduras probably has a larger population of the Quetzal than other countries in its range, but the species should be considered an endangered one. Large birds of prey and large gallinaceous birds are also declining sharply in numbers, as they are throughout their ranges.

Discussion

The conservation outlook in Middle America is one of immense problems. A few spectacular bird species are endangered and are receiving the publicity they deserve. But habitat destruction threatens many birds and countless other animals and plants. Native vegetation, especially forest, is being cleared for a variety of reasons. Hungry peoples clear for a primitive slash-and-burn agricultural practice. Logging destroys additional areas and pastures are formed from forests to provide beef for other nations. Foreign capital may support these endeavors as well as develop tourist and retirement areas in some of the last remaining untouched regions. Additionally, many people do not feel an esthetic appreciation of either birds or their environment, or if they do, a subsistence standard of living must regulate their actions. Planning a long-term gain from land use is difficult with large human populations and immediate need for food or profit. In view of the great alterations of habitats, lesser proportions are assumed by such matters as pesticide pollution, killing of large raptors, year around hunting pressure on large gallinaceous birds, caging of song birds, and the indiscriminate killing of small birds by small boys with slingshots. Yet the latter activities are a serious portion of the crisis in Middle America.

Implementable solutions to these problems are not immediately apparent. The rate at which forests and other plant formations are being altered is far more rapid than that which occurred in Europe or the United States. Education of the public is an obvious means of improving the situation, with attention devoted to conservation problems and causes, especially the high birthrate. But even though education today can be effected at a more rapid rate than in past centuries, it cannot be done in time to preserve remaining habitats. The most immediate solution calls for the setting aside of sizeable tracts of remaining habitat types and protecting these areas from human disturbance. Such ventures are most likely to be successful if they originate within the country and if there is some economic gain to be realized from not clearing the land. Tourism and watershed protection for potable water and hydroelectric power may provide good reasons for preserves. Park and preserve planners would benefit from consideration of Diamond's comments on minimal preserve size as it pertains to species evolution (1973, Science 179: 759–769). Often funds are not immediately available to patrol and manage parks and other preserves, but it is important to have such areas designated while they are still available. Much can be accomplished by conservation-oriented individuals who have some influence on the affairs of their nations; such persons can contribute immeasurably to the long-term benefit of their country.

Conservation education can be fostered by promoting interest in birds. The prevalence of caged birds in Middle America attests to their popularity! It is deplorable that literature in Spanish on conservation and birds is not widely available. There are two field guides to the identification of Middle American birds written in Spanish—del Toro's "Aves de Chiapas" and a Spanish edition of Smyth's "Birds of Tikal" is available in paperback. Free or inexpensive material on birds is greatly needed. Subsidy of artist and publication of their work would probably be an acceptable form of aid. At the university level, more trained native biologists are needed; programs devoted to their education would help. Most nations are working toward the establishment of effective conservation laws. Even if they cannot at first be readily enforced, having them on the books has some educational benefit. In many instances, the local scientific community lacks detailed knowledge of the flora and fauna; this lack handicaps formulation of conservation efforts. Funding of Latin American graduates to complete advanced degrees in the United States would be a great benefit. The need for field research is acute in most of Middle America. Existing needs could be publicized in the U.S. and Canada and an effort made to put potential researchers in contact with the appropriate agency or Middle American institution, even though the latter can usually offer only limited logistic support. Not only are general ecological and behavioral studies needed, but the effects of pesticides on the environment (especially people and birds) should be investigated.

The Committee on Conservation present this report to the A.O.U. membership with the intention that it be informative and thought provoking enough to stimulate some action. The conservation-directed activities of several Middle

American organizations and individuals have been cited in this report. They are to be commended, and they deserve all the support they can receive.

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CORRECTIONS AND ADDITIONS TO THE "THIRTY-SECOND SUPPLEMENT TO THE CHECK-LIST OF NORTH AMERICAN BIRDS"

A. In the Supplement (Auk, 90: 411–419, April, 1973) the following errors or omissions appear:

1. At p. 414 of the Supplement *Arenaria* incorrectly appears as *"Arenarius"* (the ending should be feminine).
2. At p. 415 of the Supplement *Erolia subminuta* (p. 198 of the Check-list) was omitted; it becomes *Calidris subminuta.*
3. At p. 416 of the Supplement *Catharus guttatus sleveni* incorrectly appears as *"salvini."*
4. At p. 419 of the Supplement Storm-Petrel incorrectly appears as "Storm Petrel" (the name should be hyphenated).
5. At p. 419 of the Supplement the specific name of *Bartramia longicauda* incorrectly appears as *"americana."*

B. A recent amendment of the International Code of Zoological Nomenclature, Art. 30(a)(i)(2) (see Bull. Zool. Nomencl., 29, pt. 4: 182, 1972) provides that generic names ending in *-ops* are to be treated as of masculine gender, regardless of derivation or treatment by the original author; this requires the following changes of ending from what appeared in the A.O.U. Check-list of North American Birds (Fifth ed.):

1. At p. 244 of the Check-list *Rynchops nigra* and *R. nigra nigra* become respectively *Rynchops niger* and *R. niger niger.*
2. At p. 577 of the Check-list *Arremonops rufivirgata* and *A. rufivirgata rufivirgata* become respectively *Arremonops rufivirgatus* and *A. rufivirgatus rufivirgatus.*

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