

# Galaxy

## SCIENCE FICTION

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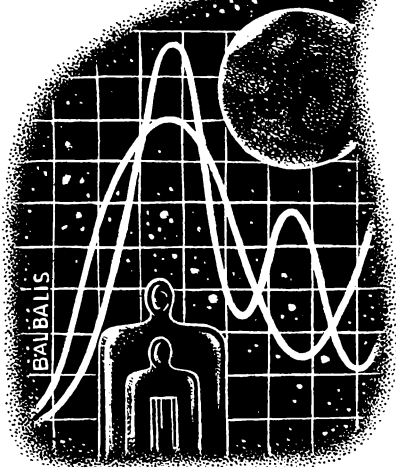
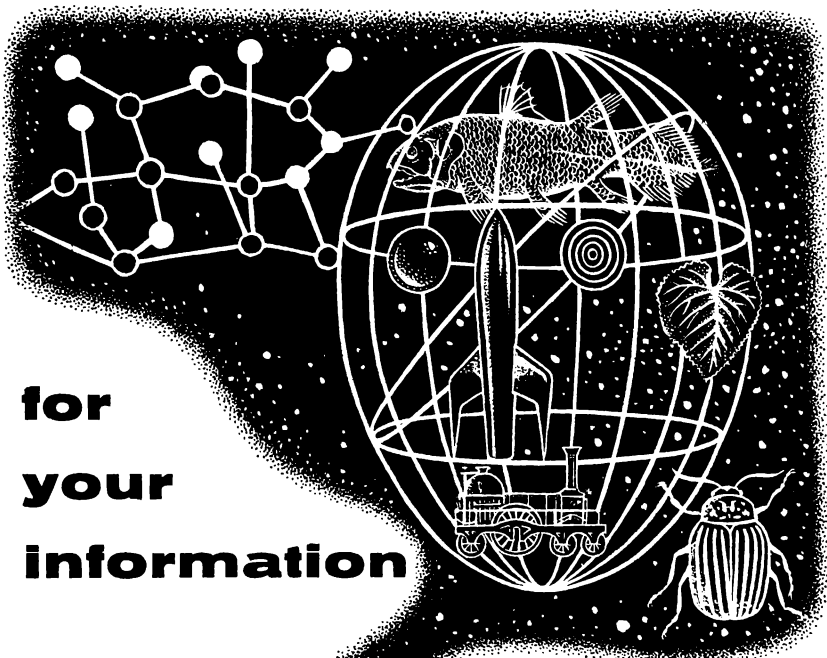
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**for  
your  
information**



## **Hunting Down the Dodo**

**By WILLY LEY**

**O**NCE upon a time, there lived on the island of Mauritius a bird named the dodo, with the scientific name of *Didus ineptus*.

Come to think of it, this is not a good beginning. The story of the dodo is not a fairy tale but the truth, or as much truth as can still be established. Moreover, this first sentence is a very unscien-

tific oversimplification. Let's try to make it a bit more accurate. Then it will read just about like this:

From a period, the beginning of which cannot be ascertained, but which might be considered roughly equivalent to the beginning of the glacial age in higher latitudes, until about the year 1680 A.D., a large and flightless bird, classified as being the representative of a sub-order of the *Columbiformes* or pigeonlike birds, known to have existed on the island of Mauritius, or Zwaaneiland, also known as Ile de France, was called dodo, or dodaers, or dronte, but also *dinde sauvage*, *Walchvogel* or *gekapte Zwaan* (hooded swan) and several other names, with the scientific designation of either *Didus ineptus* or *Raphus cucullatus*, which are equivalent in scientific usage, but with *Raphus cucullatus* holding the chronological priority.

Well, now, this is more accurate.

It also complies with the order drilled into newspapermen: "Get all the facts into the first paragraph."

But I'm very much afraid it would probably be most intelligible to somebody who knows these facts already and who, logically, does not have much reason to read it at all.

I HAD better start over again, this time with the fundamentals. To the east of Madagascar, strung out along the 20th parallel of southern latitude, there are three reasonably large islands.

Their current names are Réunion, Mauritius and Rodriguez — at least, that's the way the name of the last appears on Admiralty charts, both British and American. For some unfathomable reason, the dependency of Rodrigues, when it makes an official report to the colony of Mauritius, spells its name with an "s" at the end. I am making a point of this difference in spelling for the sole reason that it happens to be the smallest of all the difficulties and discrepancies we are going to encounter. The more serious problems will come up later.

It is hard to say just who discovered these islands. There exists at least one old map on which the three islands have Arabic names. It is quite likely that Arab trading vessels did discover them, but without paying any special attention to their discovery, since the islands were uninhabited and it is exceedingly difficult to barter on uninhabited islands.

At any event, the Arabs did not even bother to locate the islands with any degree of care. On the map mentioned, they are

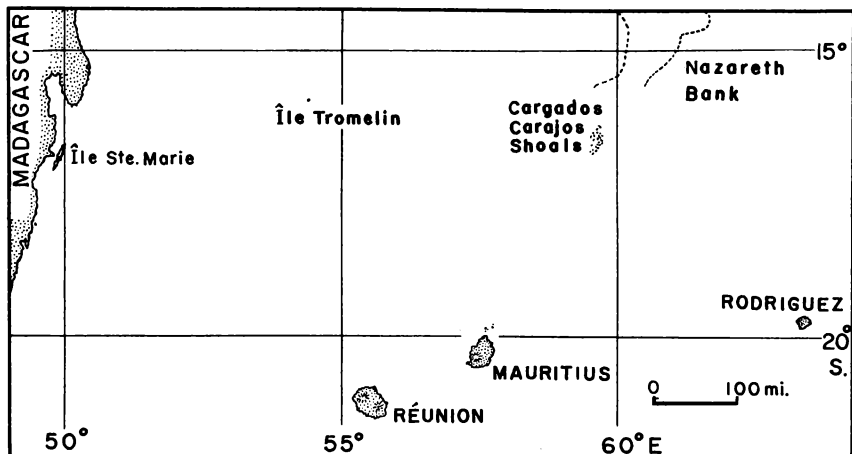


Fig. 1: Map of the Mascarene Islands with nearby shoals

drawn as forming an equilateral triangle and are placed far too close to Madagascar.

The first European discoverers were Portuguese but, strange to say, it was the second of the Portuguese discoverers who had his name attached to the islands.

The first one was Diogo Fernandes Pereira, who sailed these waters in 1507. On February 9th of that year, he found an island some 400 miles to the east of Madagascar which he named Santa Apollonia. It must have been the present Réunion. Soon after, his ship, the *Cerné*, sighted the present Mauritius. The navigator landed and named the island after his ship, as *Ilha do Cerne*.

This, I might say right here,

led to two different misunderstandings. Much later, around the middle of the nineteenth century, somebody who obviously did not know the name of Pereira's ship wondered why the navigator should have named the island after the island of Cerne, mentioned by Pliny the Elder. Wherever Pliny's Cerne was located, it could not be to the east of Madagascar.

The other misunderstanding took place quite soon after Pereira's voyage. Dutch explorers who came to Mauritius and knew the old name thought that Cerne was a miswriting for *cigne* (swan) and that Pereira had thought the dodos to be swans. The Dutch did not bother with the zoological problem involved; they "trans-

lated" Diogo Pereira's name into Dutch as *Zwaaneiland*.

Pereira, who was on his way to India, found Rodrigues later in the same year. It was first named Domingo Friz, but also Diego Rodriguez. The Dutch apparently found this hard to pronounce and talked about Diego Ruy's island, which then was Frenchified into Dygarroys – but the official French name for a time was Ile Marianne.

SIX years later came the second discoverer, Pedro Mascarenhas, who visited only Mauritius and Réunion. No name change was involved for Mauritius because of this rediscovery, but Santa Apollonia (Réunion) was renamed Mascarenhas or Mascaregne, and to this day the islands are called the Mascarene Islands.

The subsequent history of the islands was just about as complicated as this beginning. Réunion, the largest of the three islands, 970 square miles in extent, was officially annexed to France in 1638 by a Captain Goubert from Dieppe.

I don't know why one annexation was not considered sufficient, but the historical fact is that the annexation was repeated in the name of Louis XIII in 1643 and once more in 1649 by Etienne de Flacourt, who changed the name



*Manu Adriani Venny Victoris*

Fig. 2: The dodo of Mauritius as sketched by Adrian van de Venne in 1626

from Mascarenhas to Ile Bourbon. After the French Revolution, that name had to go, of course, and Réunion was re-established. But then history can be read quite easily from the various changes, for it became Ile Bonaparte. Since 1848, it is again Réunion.

Considered non-politically, Réunion is a volcanic island with three rather tall peaks. The tallest is the Piton des Neiges, which measures 10,069 feet. The other high elevation is simply called Le Volcan by the inhabitants of the island, but Le Volcan has more than one peak. One, called Bory Crater, is 8,612 feet above sea level and extinct. The other crater, known as Fournaise, is only 8,294 feet tall but still active.

An island in such a location can grow tropical fruit and there are banana plantations and breadfruit trees, not to mention coconut palms. But these plants were introduced. The original vegetation included a dwarf bamboo, a variety of *casuarina* trees and a plant called by the trade name "red tacamahac," botanically *Calophyllum spurium*.

The second island, Mauritius, is somewhat smaller than Réunion (about 720 square miles) and likewise of volcanic origin. But all volcanic activity on Mauritius is a thing of the fairly distant past. The names of its three highest mountains reflect the changing ownership of the island

through the centuries. The highest one, 2711 feet, is called Black River Mountain. The second one, 2685 feet, is Mt. Pieter Botte, while the third, 2650 feet, is called Pouce.

The island is surrounded by coral reefs which a ship's captain has to know well, but it has a fine natural harbor. These two features prompted the Dutch to annex it in 1598 and they gave it its current name after Count Maurits of Nassau.

The Dutch abandoned Mauritius in 1710. For slightly more than a half a century (1715-1767), it was French and called Ile de France. In 1810, it was taken by the English, who

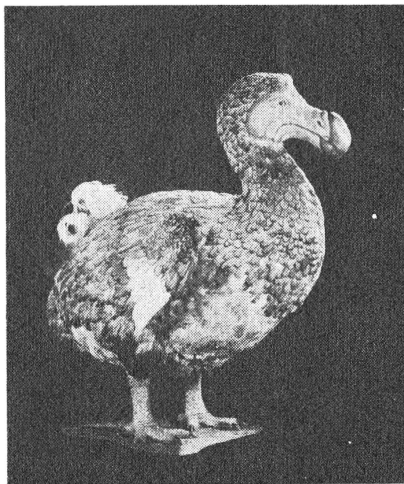


Fig. 3: Life-size restoration of the dodo of Mauritius in the American Museum of Natural History, New York

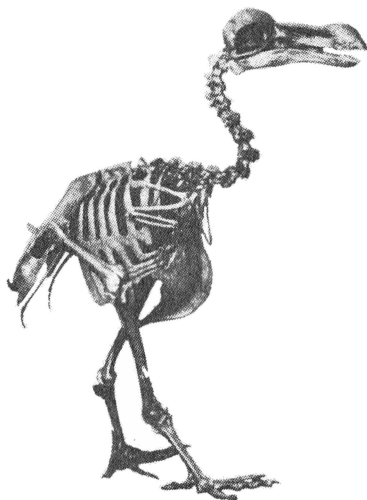


Fig. 4: Skeleton of the Mauritius dodo, assembled from sub-fossil bones

(Courtesy: AMNH)

restored the Dutch name.

Right now, Mauritius is a "spice island" where spices, pineapple, mangoes, avocados and bananas are grown, along with sugar cane. But the original vegetation is still represented by ironwood trees, ebony trees, traveler's trees and bamboo. Of course, domesticated animals were introduced on both islands, but Mauritius is somewhat special even in that respect — the deer that can be found there came from Java, not from Europe.

**A**S regards Rodriguez, its story is similar but shorter. Its extent is only 43 square miles. It is volcanic in origin, with 1300-foot Mt. Limon as its highest peak, and there is a fringing coral reef. The ownership of the island was Dutch, French and English in succession. In all cases, the first inhabitants were either deportees or people in voluntary exile, some of them mutineers, some refugees from religious intolerance.

Though all this had to be mentioned to establish a background, none of these facts would have made any of these islands famous. The only one which would enjoy a kind of restricted fame would be Mauritius, among stamp collectors, because of an early philatelic error which produced some of the rarest stamps in

existence. But these Mascarene Islands are famous because they once were the home of the dodo and related birds.

The story of the dodo (let's concentrate on the Mauritius dodo for the time being) looks rather simple, if somewhat sad, in rough outline. Its existence was first reported by Dutch navigators, who were far less thorough in their descriptions than one would now wish they had been. But they made up for this to some extent by bringing live specimens back with them to Europe. There they were painted, mostly by Dutch painters and, again it must be said, not as well as one would now wish.

But the major blunder was committed in England. About 1637, give or take a year, a live Mauritius dodo arrived in England. It lived there for quite some time, and after its death, it was "stuffed" (badly, no doubt) and found a place in Tradescant's Museum in London in 1656. A few decades later, the stuffed dodo was transferred to the Ashmolean Museum at Oxford. This was in 1683 — as we now know, two years after the last report of a live dodo on Mauritius was put on paper by one Benjamin Harry.

In 1755, the curator of the Ashmolean Museum decided that the moth-eaten old skin was a disgrace to his fine collection and

ordered that it be thrown away to be burned with other trash. At the last moment, somebody wrenched off the head (partly decayed) and one foot (in good condition). They are now about the rarest items on record.

**E**VEN this outline story contains one more surprising item. The first scientist to include the dodo as an exotic bird in a book on natural history was Carolus Clusius in 1605. Later, Carolus Linnaeus gave it a scientific name, and quite naturally the dodo entered into the zoological works of Buffon in France and Blumenbach in Germany.

But by 1800, nobody had ever seen a dodo. The available paintings did not seem convincing. They looked like caricatures to begin with and did not even agree with each other.

Some scientists, bent on a housecleaning in scientific literature, began to doubt whether there had ever been such a bird. Maybe it was all a misunderstanding, if not worse, and the descriptions had meant the cassowary.

At any event J. S. Duncan of Oxford felt obliged, in 1828, to write a paper with the title: "A summary review of the authorities on which naturalists are justified in believing that the Dodo, *Raphus cucullatus* (*Didus inep-*

*tus*), was a bird existing in the Isle of France, or the neighbouring islands, until a recent period." Mr. Duncan can be said to have saved the dodo from secondary extinction in scientific literature.

But let's go back now to the original sources. The first man to write about the dodo was the Dutch Admiral Jacob Corneliszoon van Neck, who went to Mauritius with eight ships. Four of them returned to Holland in 1599, the other four in 1601. Admiral van Neck's narrative appeared in Dutch in 1601 and translations into English, French and Latin were printed during the same year, a German translation one year later.

In spite of this volume of printed matter, there are still a number of question marks. The original journal, presumably written on shipboard, was enlarged for publication — we don't know whether by the admiral himself or by an editor. Moreover, one old naturalist, who did not leave Europe, gave a dodo picture which, he said, was copied from Admiral van Neck's journal. But this picture cannot be found in any known edition of the journal.

The passage in the admiral's journal in which the dodo is first mentioned reads:

Blue parrots are very numerous there [referring to Mauritius] as



well as other birds; among which are a kind, conspicuous for their size, larger than our swans, with huge heads only half covered with skin, as if clothed with a hood. These birds lack wings, in the place of which three or four blackish feathers protrude. The tail consists of a few soft incurved feathers which are ash-colored. These we used to call *Walghvogels* for the reason that the more and the longer they were cooked, the less soft and more insipid eating they became. Nevertheless, their belly and breast were of a pleasant flavor and easily masticated.

**T**HE Dutch word *Walghvogels* (also spelled *Walchvogels*) translates literally as “nauseating birds,” but it led to one of the many mistakes that crowd the dodo’s short life history.

About two hundred years later, it was asserted in German books that there had been Forest Birds, so named, on Mauritius. There probably were, and still are, forest birds on Mauritius, but the Forest Bird was only a sloppy translation, appearing in its German form of *Waldvogel*. Spelling in those days was helter-skelter in any language, so somebody probably thought that “walgh” was just a poor rendering of “Waldt,” a then frequent spelling of the German word *Wald*, which means forest.

Since this has raised the problem of the name of the bird, it

might be just as well to clear up this additional difficulty as much as possible.

In the most recent specialized professional work on the dodo, by the Marquis Masauji Hachisuka, not less than seventy-nine different names are listed. But the confusion is not quite as large as this figure seems to indicate, for the names clearly fall into a small number of classes.

One set of them tries to be descriptive. They are mostly French, as, for example, *austruche encapuchonné* (hooded ostrich), *cygne capuchonné* (hooded swan) and *dinde sauvage* (wild turkey). Another set are either translations or mistranslations of Dutch names. The Dutch names themselves are either variations on the theme of *walghvogels* or else descriptive terms similar to the French names just mentioned.

Just two words emerge as, so to speak, “exclusive” terms. One is the name *dodo*, with the variations *dodaars* and *dodaerts*, and the other one is *dronte*.

It is reasonably certain that “dodo” is a name coined by the Portuguese, as witness a letter written in 1628 by Emanuel Altham about “very strange fowles called by ye portingals Do Do.”

The fact that Altham pulled the two syllables apart, thereby changing their pronunciation, is “very suspicious-making,” as a

French lady I know phrased it. It is so suspicious — or, rather, indicative — because old Dutch and German writings spell the name as *doedoe* and *dudu*, all of which must be pronounced “doo-doo.” Since it has no real meaning in any language, it can well be, as has been asserted, an imitation of the bird’s call.

The Dutch variation *dod-aars* or *dod-aers* is rather clear to an English speaker, especially in view of the Dutch descriptive remarks *ende heeft een rond gat* (“and has a round rump,” as van Neck put it) or *rond van stuiten* (“round of stern,” as Capt. Willem van West-Zanen wrote in 1602).

**H**OWEVER, the name *dronte*, which in Dutch and in German was used about equally frequently as *dodo*, still is not explained. The Englishman H. E. Strickland, who wrote the first book about the *dodo* in 1848, and it is still good, accepted the explanation that this term was coined by Danish sailors, using their verb *drunte*, which means “to be slow.” This is not only somewhat far-fetched on the face of it, for the Danes, for a change, have not contributed anything to the story of this bird; it is not even necessarily correct. We simply don’t know whether the *dodo* was slow and the evidence

is not very much in favor of this assumption.

The Dutch zoologist Prof. A. C. Oudemans—yes, the man who wrote the 600-page book on the Sea Serpent—has pointed out—in another book devoted to the *dodo* only—that there was a now obsolete Middle-Dutch verb *dronten*. Its meaning was “bloating” or “swollen,” which sounds much more reasonable. But Prof. Oudemans could not prove that this was actually the derivation; a lot of early writings on the *dodo* seem to be lost.

The records are incomplete also as regards the number of birds taken away alive. If it were not for a chance mention in Peter Mundy’s journal — he served with the East India Company from 1628 to 1634 — we would never know that two of them were brought to India. But his statement is definite: “Dodoes, a strange kind of fowle, twice as big as a Goose, that can neither flye nor swimm, being Cloven footed; I saw two of them in Suratt [the first British settlement in India, started 1612] house that were brought from thence [Mauritius].”

There is a similar chance mention about one having been sent to Japan, but Japanese scientists have failed, in spite of much effort, to trace its fate from Japanese chronicles and books.

Going by such remarks on the one hand and, on the other hand, by sketches and paintings stated or reported to have been made from life, Dr. Hachisuka listed a total of twelve specimens of the Mauritius dodo as having arrived in Europe: one in Italy, two in England and nine—five males and four females—in Holland.

In other books, particularly in works which treat the paintings as paintings instead of as ornithological illustrations, larger figures are usually mentioned. This is partly due to counting sketches and paintings made from earlier paintings. Mostly, however, it is due to the fact that no distinction is made between the gray Mauritius dodo and similar birds from the other two Mascarene Islands.

**B**UT no list, whether of specimens or of paintings, can be considered final. In 1914 and 1915, a German scientist, Dr. S. Killermann, set out on a systematic dodo hunt in museums, libraries and art galleries and discovered about half a dozen pictures that had simply been overlooked before. Killermann's feat could probably be repeated by somebody today with the inclination and the necessary time and money.

As has been mentioned, the Clusius picture has been copied

from a lost original of van Neck's journal. Somebody might still find it. Similarly, it is known that an unnamed artist on board of one of the ships commanded by Admiral Wolphart Harmanszoon made several drawings from life while the ship was in Mauritius harbor in 1602. The originals are now "lost," but somebody might find them.

Likewise, one of the several oil paintings of dodos made by Roelandt Savery is listed as lost.

In short, while a dodo investigation is no longer virgin territory, it is still a fertile field with possibilities for a diligent researcher.

One of the earliest and best pictures of a Mauritius dodo drawn from life is the pen-and-ink drawing by Adrian van de Venne. It was made in 1626 and shows a male. This is what we now think of as the normal appearance of the dodo. However, it was Prof. Oudemans who first realized that the dodo must have had two "normal appearances"—one fat stage and one gaunt stage. This assumption explains many old sketches which look like caricatures; the latter impression is considerably strengthened by the fact that a number of sketches were made while the birds were moulting.

Oudemans' idea makes it possible to arrange all these sketches

in a logical sequence, pre-moulting, at the height of the moult, post-moulting, fat and gaunt. But why a bird on a tropical island, where the food supply should be more or less the same all year round, should go through a gaunt stage at regular intervals is not yet fully explained.

The Mauritius dodo became extinct between 1681, the last time it is mentioned as living, and 1693, the first time it fails to appear on a list of the animals and birds of the island made on the spot. By 1750, the people living on the island did not even know any more that there had been such a bird.

A hundred years later, there lived a man on Mauritius who was an ardent naturalist. This man, George Clark, not only knew about the dodo, but was determined to find dodo remains. They had to be somewhere on the island, for the entire species could not possibly have become extinct without leaving traces. But where would these traces be located?

At first glance, the situation did not look too promising. "In fact," George Clark wrote, "there is no part of Mauritius where the soil is of such a nature as to render probable the accidental interment of substances thrown upon it. It may be classed under four heads: stiff clay; large masses of

stone forming a chaotic surface; strata of melted lava, locally called *pavés*, impervious to everything; and loam, intermixed with fragments of vesicular basalt—the latter too numerous and too thickly scattered to allow anything to sink into the mass by the mere force of gravity. Besides this, the tropical rains, of which the violence is well known, sweep the surface of the earth in many places with a force sufficient to displace stones of several hundred pounds weight."

**A**FTER having reached this point, Clark all of a sudden had a new idea. If these tropical rains swept everything before them, where did they sweep it? Well, there was a kind of delta formed by three rivers running into the harbor of Mahébourg. If dodo bones had been washed into one of the rivers, this was the likely place where they might have come to rest. One part of that delta was a marsh known locally as *le Mare aux Songes*. Mr. Clark promised himself that he would dig there, as soon as he had the time and some means to pay laborers for the actual work.

About 1863, he began to dig, finding large numbers of dodo bones at the very bottom of the marsh, to the delight of anatomists, and to the intense aston-

ishment of aged creoles who were standing around and were somewhat annoyed by seeing something on their own island which they had not known about. As a result of George Clark's successful digging, there is no doubt about the dodo's skeleton. As a matter of fact, it was this material which helped to unravel such problems as were posed by the sketches of artists who did not know anatomy — at any rate, not bird anatomy.

And while no museum can have an authentic dodo, several museums can, at least, boast authentic dodo skeletons, like the one at the Smithsonian Institution which was put together by Norman H. Boss.

The American Museum of Natural History in New York

has such a skeleton, too, but it also has something which makes casual visitors wonder whether a dried skin might have survived somewhere.

The museum has a restoration, made in the taxidermy studios of Rowland Ward in London. The feet and the head are copied from the preserved specimens. The feathers are those of other birds, correct in color and, as far as can be ascertained, correct in shape. The dodo is in the fat stage, the one we know best from pictures.

Well, this is the somewhat sporadic story of the gray dodo of Mauritius. But there are two more Mascarene Islands and they had dodolike birds, too. We'll go into *that* story in the next issue.

— WILLY LEY

