

# NATURAL HISTORY

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# NATURAL HISTORY

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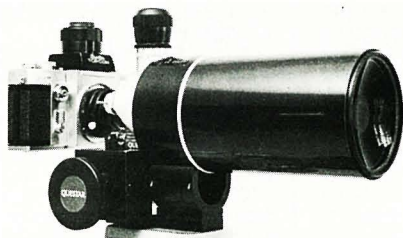
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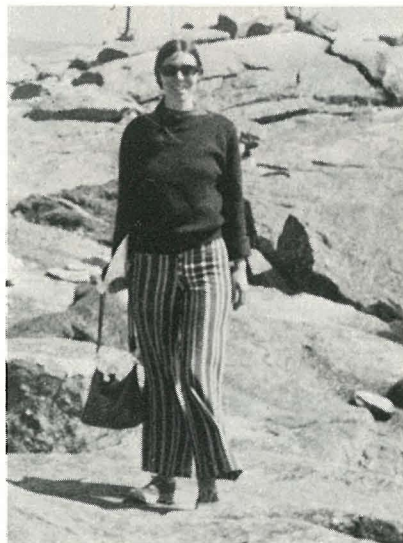
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Michelle Eldredge, coauthor of "A Trilobite Odyssey," assisted in the collection and analysis of trilobite fossils on all the field



*Michelle Eldredge*

trips undertaken by her husband during the past five years. She has a master's degree in English from Columbia University, but paleontology has become her primary avocation. She also plans to make an ecological study of a pond in the Adirondack Mountains of New York, where the Eldredges spend a part of every summer.

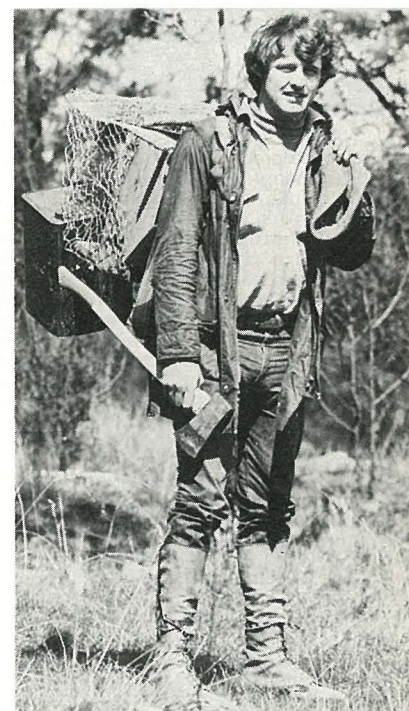
As director of a smallpox and measles eradication program in Mali during the late 1960s, Pascal James Imperato found it necessary to make a comprehensive study of the social organization and migratory movements of the Peul and Bozo nomads. The results provided a clear picture of a transient, but not haphazard,



*Pascal James Imperato*

society. Imperato, director of the Bureau of Infectious Disease Control and principal epidemiologist of the City of New York Department of Health, received a master's degree in public health and tropical medicine from Tulane University after completing a residency in internal medicine. He has done extensive field work in Africa, including research into the witchcraft and traditional medicine practiced by the Luo of Tanzania and skin sensitivity among various tribes in west Africa.

Convinced by the continuing reports of sightings and tracks that the Tasmanian tiger is not extinct, Jeremy Griffith began a thorough search for the marsupial predator six years ago. Probing the remote Tasmanian bush with electronic camera monitors and assisted by a team of volunteers, he hopes to succeed where previous expeditions have failed. Ronald Strahan, director of the Taronga



*Jeremy Griffith*

Zoological Park in Sydney, Australia, writes of Griffith's ability to continue the hunt despite a lack of funds that "he has learned how to live off of the smell of an oil rag." Griffith, who earned a B.S. in zoology from the University of Sydney, hopes to pursue a career in wildlife conservation when the search for the Tasmanian tiger is concluded.



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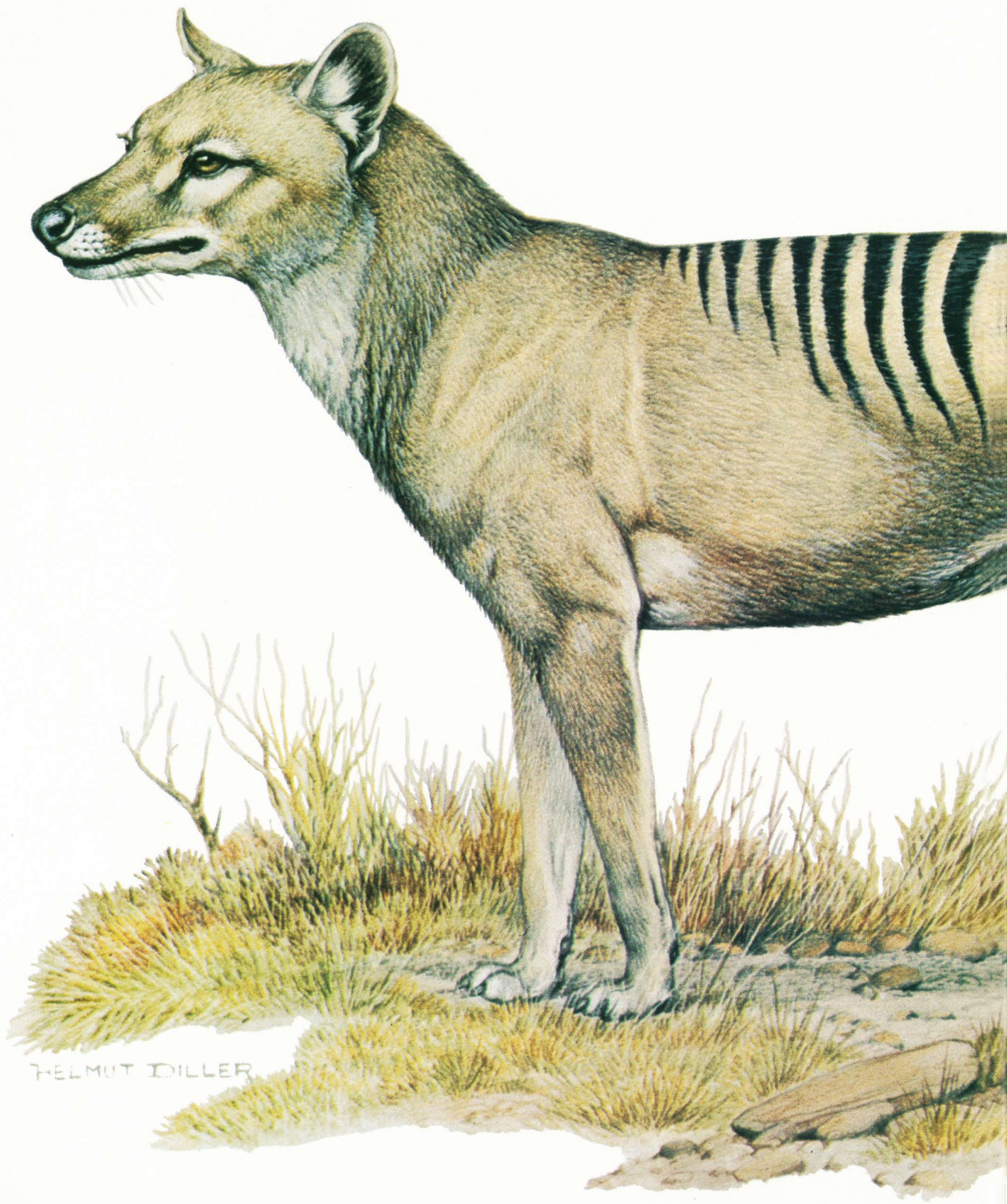


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# The Search





# for the Tasmanian Tiger

**Do the continuing reports of sightings mean  
that this primitive carnivore  
is not extinct?**

**by Jeremy Griffith**

The Tasmanian tiger is—or was—one of the largest marsupial carnivores in the world. It was once plentiful throughout Australia's island state of Tasmania, persistently tracking its







A few thylacines may survive  
as relict populations  
in the unsettled bush  
country that still covers  
much of western Tasmania.

prey in the abundant grassy plains and forests that characterized much of the territory prior to the arrival of white settlers. Early in this century, however, it seemingly disappeared, and the general opinion among zoologists is that the species is extinct.

The possibility that the tiger still survives in the island's remaining wild, and until recently impenetrable, bush country has inspired speculations not unlike those associated with the Loch Ness monster. The mystery surrounding the animal's continued existence has been compounded by frequent reports of sightings, although numerous expeditions have found few traces of it.

Convinced that there is a rea-

sonable chance that at least a limited number of the nocturnal predators still prowl the game trails of the remnant wilderness, James Malley, a native bushman, and I have been conducting a thorough search for the animal. For the past six years we have scoured the bush for signs and followed up promising sightings. In spite of a paucity of funds and equipment, we have developed techniques to either live-capture an individual or otherwise verify its presence in an area.

The animal we are seeking has a superficial resemblance to a wolf, hence its other popular name—the Tasmanian wolf. It is also known as a hyena. A series of distinctive, blackish-brown stripes across the back, rump, and base of the tail is responsible for its most colorful name: the Tasmanian tiger. But none of these is appropriate for *Thylacinus cynocephalus* (which means pouched dog with a wolf head), and such misnomers have contributed to many of the misconceptions and legends about this primitive, stealthy

carnivore. Since it is the only species of its genus, *Thylacinus*, thylacine is a preferable name.

The thylacine's closest relative is the Tasmanian devil, *Sarcophilus harrisii*, a small bearlike marsupial that is also confined to Tasmania. Both animals have strong jaws, which they can open extremely wide. When thylacines yawn, the sides of their upper and lower jaws form an almost straight line, and they are said to be able to chop through the bones of any animal they catch.

Like other marsupials, the thylacine carries its young in a pouch on its belly. But unlike some, the pouch opens backwards, enabling the animal to run through thick scrub without hurting the offspring inside. The female's pouch encloses four mammae, and the male has a vestigial pouch. Because she has a shorter and broader head than the male, the female was sometimes referred to as a "bulldog tiger"; males were called "greyhound tigers."

The thylacine is a grizzled, tawny-gray or yellowish-brown



color, and measures about six feet long and two feet high at the shoulder. There is an accurate record of a seven-foot, nine-inch skin, measured from snout to tip of tail. While thylacines have been recorded from every region of Tasmania, it appears that they were more plentiful in areas where environmental conditions were the least severe. Based on the sketchy historical record of those who hunted or otherwise had contact with thylacines, the animals preferred broken country, with a combination of thick bush, rocky recesses, and open plain.

Thylacines evidently were fond of dry, dark places in which to "lie up" during the day. In fact, there are still places in the bush called "hyena rocks" and "tiger caves."

Most of what we know of the thylacine's habits is based on hearsay. Statements about its lifespan, breeding behavior, or spatial requirements are pure speculation. Almost exclusively nocturnal, even when they were abundant, they were rarely seen.

Anecdotal accounts from the 1800s and the early part of this century suggest that they hunt largely by scent, doggedly pursuing their prey for hours until it is exhausted. The kill is made by chopping into the victim's skull rather than by biting into the neck as a dog does. They feed primarily on blood, vascular tissue, and occasionally muscle, but there is evidence that they will also feed on carrion. The bulk of their prey consists of kangaroos, wallabies, small mammals, and birds.

Basically solitary animals, adults have been reported hunting in pairs and occasionally in what appeared to be family groups. Mothers accompanied by one to four young have been observed, and the offspring apparently stay with the mother until about twelve months old.

Their gait has been described as a shambling canter, and some observers maintain that when hard pressed, a thylacine hops like a kangaroo. But this seems improbable in view of the extreme posterior position of the hind legs and the forward position of the center of gravity.

Describing Benjamin, the last captive thylacine, which died in the Hobart Zoo in 1934, his keeper said: "He never made any sound, his bearing and silence was uncanny." The few references to the sounds made by thylacines mention a guttural, coughing bark while they are hunting and a whine, which may serve as a form of communication. Generally they have been called shy, furtive, and "morose." Adults were described by one zookeeper as being "difficult to tame, while the young are quiet and tractable, doing well in captivity provided they are given some small game besides meat." One old trapper told us that he kept a thylacine in a shed and that it thrived on fresh wallaby liver.

Bushmen have told us that tigers would follow them through the bush, and that they would also occasionally hear the animals around their camps at night. Thylacines are not aggressive toward man, and this behavior suggests that they have an inquisitive nature.

Fossil remains of thylacines have been found in many parts of Australia and even New Guinea. A mummified corpse, with fur and dried eyeballs still intact, was found in a cave in Western Australia in 1966. Carbon dating indicated that the animal had died somewhere between 2940 B.C. and 2240 B.C. Fossil evidence indicates that the thylacine disappeared from the mainland some 3,000 years ago, or soon after the introduction of the dingo. It is likely that the dingo, a more highly developed predator with habits similar to the thylacine's, competitively excluded it from the mainland. Tasmania and Australia were separated about 7,000 years ago and the dingo never reached the island.

The thylacine is difficult to domesticate, so the Tasmanian Aborigines did not befriend it. Nor did they hunt it—possibly because its elusiveness made it an unrewarding game animal in terms of the energy expended to kill one. So the thylacine was not persecuted until white sheep farmers appeared on the Tasmanian scene

in the mid-nineteenth century.

Apart from the fossil record and local legend, little remains of its past other than a few bounty statistics, numerous stuffed museum specimens, some old movie footage of a caged specimen, and a few black-and-white photographs. The following is a collection of records and events that contain the essence of our factual knowledge of the thylacine's recent history:

**1808:** Surveyor general George Prideaux Harris gave the first scientific description of the species.

**1832–1849:** Records at the Van Diemen's Land Company of Surry Hills in northwestern Tasmania show that 147 sheep were killed by thylacines. In 1840 the company introduced a bounty for thylacine scalps.

**1863:** Naturalist J. Gould noted that the thylacine faced extinction.

**1874–1887:** Van Diemen's Land Company records show a total of 70 thylacines killed.

**1878–1893:** Records of a now defunct tannery show that a total of 3,482 thylacine skins were dispatched to a London firm, where they were made into waistcoats.

**1888:** The Tasmanian government introduced a bounty on thylacines because they were regarded as serious sheep killers. The last bounty was paid in 1909, and in the interim 2,184 were paid. One hundred and fifty-three, the largest number for any one year, were paid in 1900. A rapid decline followed until none at all were paid in 1910.

**1888–1914:** Van Diemen's Land Company records show that 84 thylacines were killed on their Woolnorth station during this period; again, the greatest number were killed in 1900, and a sudden decline followed.

**1909:** A newspaper advertisement offered "tiger shoots for visitors in search of fun!"

**1910–1919:** A Mrs. Roberts, who kept thylacines in her private zoo in Tasmania, shipped more than a dozen to zoos around the world, including London, Washington, and Wellington. From time to time specimens were kept in Australian zoos. The London



zoo has had at least a dozen thylacines, the last having been purchased in 1926; this specimen died in 1931. Australian naturalist David Fleay writes of this period: "Tigers were caught in box traps on bacon bait in the days when they brought in living specimens slung on poles to the late James Harrison of Wynyard—the man who acted in Tasmania as an agent for zoos all over the world."

1930: Officially, the last thylacine killed was shot at Mawbanna on the northwest coast. However, it is common knowledge in Tasmania that there were others killed after this date.

1934: Benjamin, the last thylacine in captivity, died in the Hobart Zoo.

The Griffith-Malley team is now concentrating its search in northeastern Tasmania, where reports of sightings have been on the increase.

1938: The Tasmanian government placed the thylacine on the list of wholly protected animals.

1938: Two naturalists, Sharland and Fleming, conducted short, month-long expeditions in search of thylacines in remote west coast areas. Sharland reports of one expedition: "We found tracks of thylacines every few miles—as the toe marks were well defined and the claws had been pressed deeply into the mud, the plaster casts when taken from the ground resembled dental plates with the claw impressions projecting like teeth." This is more likely a description of a forefoot print of a wombat, a badgerlike marsupial.

1945: David Fleay mounted a four-month expedition, revisiting the area Sharland surveyed in 1938. He sought to capture a pair by dragging scent trails to large box-type traps. Plaster casts of supposed thylacine tracks were brought out. Of these, two are wombat tracks, while the others are indistinct. In his report Fleay notes that snaring began intensively in this area in 1941, and

that by 1946 there were "snare poles along every track and animal pad of consequence that we traveled." He mentions recent reports of sightings of thylacines by various bushmen, but no sightings were made by his party.

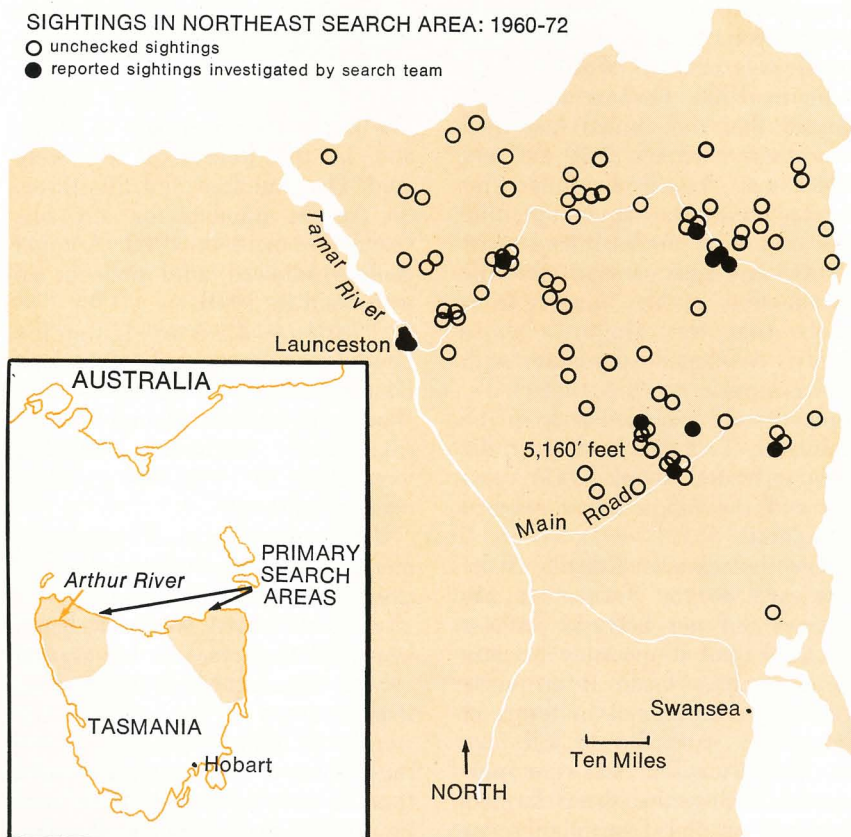
1958: Walt Disney sent a film team to Tasmania, which conducted an unsuccessful search.

1960: Sir Edmund Hillary, the first man to climb Mount Everest, joined a short, fruitless search.

1961: A thylacine was supposedly shot on the west coast. Mainly on the strength of this report, the Tasmanian Fauna Board launched a huge search. They relied on hundreds of snares set in the bush. But the type of trap used was a treadler snare, designed to be triggered by animals with long hind feet, such as the wallaby. Thylacines, because they normally walk only on their foot pads, are able to bypass the trigger-stick. Also, the idea of snaring areas without first finding other evidence of thylacines meant, in our opinion, that they had virtually no chance of success. The search was a fiasco.

These pieces of information suggest that the thylacine population was at a peak in 1900, then suddenly crashed and never recovered. It is widely thought that the crash was due to a disease outbreak in about 1910 that affected both thylacines and Tasmanian devils, but there is no direct evidence for this. Surprisingly, it does seem that until 1900—despite continued hunting and spreading civilization—thylacines were surviving in many areas.

The failure of the thylacine population to recover after 1910 is probably due to several factors, acting singly or together. In many areas the original decimation of the animals was so drastic that their numbers were reduced to a point where a viable breeding population was no longer possible. Persecution by sheep farmers was severe and relentless. This extract from a letter from an old Tasmanian resident illustrates the effectiveness with which the thylacines were exterminated over a short period of time:

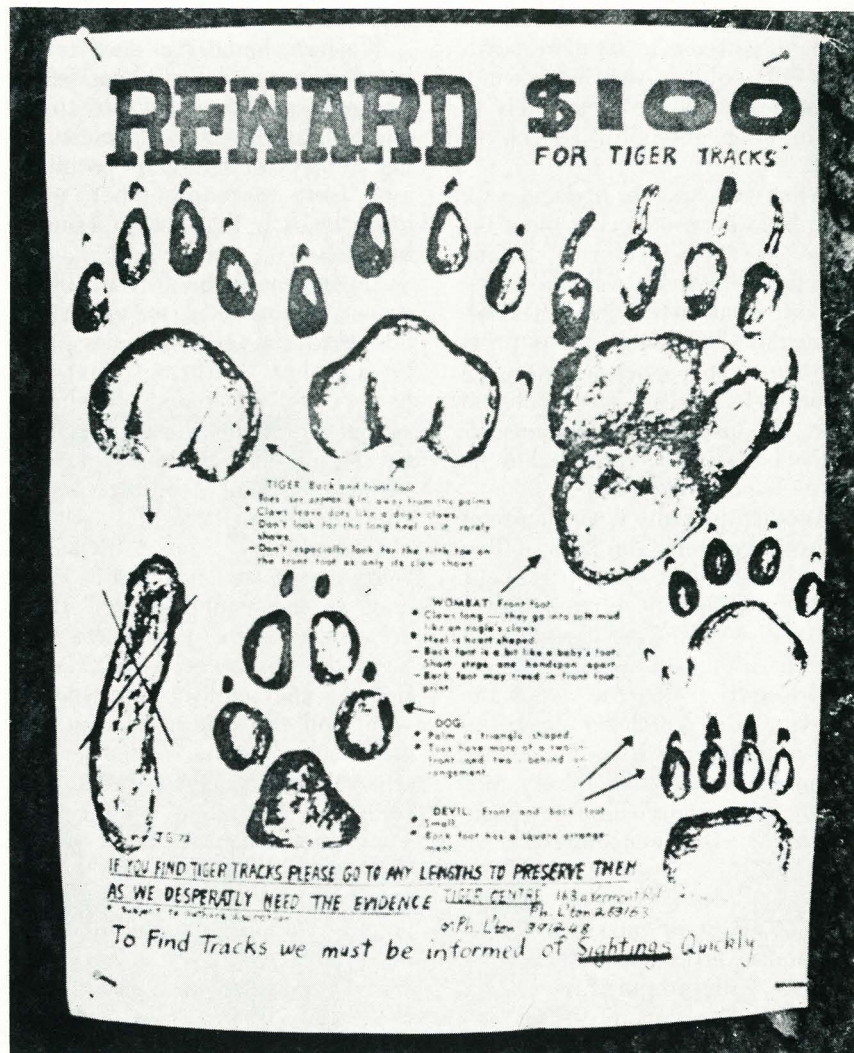




"Tigers were a proper problem with sheep in the Great Lake country. . . . Around 1900 some of the landowners . . . put together a tiger bank. . . . The bank was forty pounds in those days and they thought to pay two and six [25¢] per head. Well, two men built a rough brush fence and caught the tigers. They fetched in a load of tiger skins (about 300) and broke the bank in four months."

Approximately 15 million wallabies and opossums have been snared for the fur trade in Tasmania since 1923. Although thylacines were only occasionally caught this way, we think that the associated practice of leaving poisoned carcasses for Tasmanian devils, which habitually raided the snare lines, has been the primary cause for the complete disappearance of thylacines in many areas. Snaring is practiced in the winter months, when the animals' fur is thicker and they are not yet breeding. It is also at this time that thylacines would probably be ranging greater areas in search of food. They would then be prone to feed on whatever poisoned carcasses were left by the snarers. Possibly after only a few years of snaring and poisoning in an area, any thylacines would have been exterminated in this fashion.

This theory would account for the fact that over the last 30-odd years snarers have not accidentally caught a thylacine. Since 1930 the most promising sightings have, in fact, been in areas outside those of extensive snaring. Fleay came to a similar conclusion in 1946: "It is undoubtedly true that skinhunters . . . have played a very large part in bringing the thylacine so quickly to the brink of extinction." Fleay's suggestion for saving the thylacine was to "prohibit snaring in any form." It is a great pity that this advice was not followed, even in part, by the authorities. While snaring over the last few years has not been profitable and is now seldom practiced, some does still occur—along with poisoning—in remote areas where the thylacine could be expected to be making a final stand.



The failure of the population to recover may also be due to habitat alteration. Much of the plains country, especially the fields of button grass—a three- to six-foot sedge—were created by periodic burning. It is thought that the Aborigines originally burned the plains out of the bush, and the practice of "burning off" was perpetuated by the early snarers because it meant easier going and more green forage for game. These bushmen are fast disappearing, however, and today much of the land is badly overgrown and neglected. This has led to a reduction in game and thus, less food for thylacines.

Finally, it is reasonable to expect that a large primitive predator would find it difficult to adjust to the effects of man on its environment. We suspect that thyla-

Reward notices have been posted in hopes of reducing the time between a sighting and the chance to check for tracks.

cines are not very adaptable and would be easily frightened by any disturbance.

Numerous sightings of thylacines have been reported in the past twenty years. At present we receive detailed reports of sightings about once a month. The problem with sightings is that we can never be sure of what was actually seen, and we often don't hear of a sighting in time to find tracks. However, there are a large number of sightings and the num-



ber has increased in recent years. Also, there seem to be more sightings in colder weather, when thylacines would be most likely to be moving about in search of food.

When searching for thylacines we have little hope of seeing them because of their nocturnal habits; therefore, we must rely on either tracking or attracting them. The latter method is inconclusive in proving their existence because if we are unsuccessful we are essentially no wiser. Because of the wet winters, effective bush work is restricted to the more clement months.

Another difficulty is the nature of the country itself. The bush of Tasmania's west coast, where part of our search is now concentrated, has a deservedly mean reputation, and some of it remains virtually unexplored and uncharted. When he joined a brief search for the thylacine in 1960, Sir Edmund Hillary commented that the country was among the most difficult to negotiate that he had ever encountered.

Typically, it is a wet, wild, and rugged wilderness, with rough, broken mountain ranges featuring occasional vertical peaks devoid of timber. Valleys and ravines are shrouded in forests of beech and primitive pines, and the rough plains of button grass complete the landscape. The bauera bush, with dense, vinelike branches, grows in the forest like a giant net. Twenty-foot-high tea trees and giant cutting grass add to the undergrowth, which, together with the high rainfall and rugged terrain, makes this wilderness so inhospitable. Animal life is not abundant, and thylacines—preferring the more open bushland of central and eastern Tasmania, which is now well settled by man—were never common here.

Walking in this region is often extremely difficult, and when surveying an area we follow game tracks wherever possible. We seldom encounter wildlife and it is only by studying game trails that we learn about any animal movements. We expect that a thylacine, unless disturbed, would have regular habits and that we would pick up its tracks at some point if it were hunt-

ing in the area under search.

We have found that such tracking requires a lot of experience. The only guide we have to thylacine footprints comes from studying the feet of museum specimens and from drawings that were made by R.I. Pockock of London in 1926.

Having been into every likely corner of Tasmania, we appreciate how elusive a few thylacines could be in that country. That we haven't as yet found conclusive evidence of thylacines does not necessarily indicate that they are extinct. Rather, it illustrates the enormity of our task.

Undoubtedly, some thylacines were extant at least until 1950, and we are confident that there are areas where they have survived the last twenty years. Conditions in the southwest are too severe, and the central plateau and midwestern regions have been extensively snared. Financial support from the Australian Conservation Foundation enabled us to survey the most promising of the remote parts of these areas two years ago, and we found no sign of thylacines. It is in the areas bordering the central plateau of Tasmania, the Arthur River in the northwest section, and in the northeast corner of the island that we hold our greatest hopes. Excellent reports of sightings have come from all of these areas. The most recent plaster cast of what we consider a definite thylacine footprint was taken in 1961 at Mawbanna, near the Arthur River, the same place where officially the last thylacine was shot in 1930. We have also recently found indistinct tracks that we believe were made by a thylacine near the same site.

We anticipate that it may take many more months to find conclusive evidence of thylacines, but to complement our system of tracking, we have developed an automatic camera-monitoring system to place alongside likely trails. Results in the last months show these monitors to be highly reliable, and we have obtained photographs of wallabies, Tasmanian devils, and other animals.

For years we have been liter-

ally beating our heads against the bush in what some have termed a quixotic quest. Our justification has been the concern, shared by zoologists and naturalists, over the Tasmanian tiger's survival. With growing local support and a limited amount of financial assistance from the Australian government, we have covered hundreds of square miles in the pursuit of thylacines, checking out as many





sightings and leads as possible. Our experiences in the field lead us to believe the trail is at least getting warmer.

James Malley and I believe the thylacine must be found soon if it is to be saved. The last pockets of wilderness will soon be cleared for mining, timbering, and hydro-electric ventures, destroying the remaining thylacine habitats. Also, if there is another outbreak of dis-

ease among Tasmanian devils, it could well affect any remaining thylacines. And not more than five miles from where we believe we tracked a thylacine, a notice on a fence post warned of the use of 1080 rabbit poison in the area. We are powerless to help thylacines unless we can find them and assess their predicament; the alternative is that an uncertain case of extinction will become certain.

A pre-1930 captive thylacine stands with one heel on the ground. This posture is not typical and may be due to a foot injury.

