Identification of Cat Leprosy Bacillus Grown in Mice[1]

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Mycobacteriosis in cats was initially reported by Brown, *et al.* in New Zealand ([1]). The disease was differentiated from that caused by *Mycobacterium tuberculosis* in experiments which mainly involved animal inoculation in guinea pigs. Lawrence and Wilkham ([3]) found the same mycobacteriosis in cats in Australia. They reported this as cat leprosy because similar pathological changes occurred in rats inoculated with bacilli from these cats as occurred in rats inoculated with murine leprosy bacilli. Wilkinson ([10]) also reported cat leprosy in England, and Leiker and Poelma ([4]) found cat leprosy in The Netherlands. It was found that the bacilli from these cases of cat leprosy could be successfully transferred to rats, mice, and hamsters, and that pathologic changes occurred similar to those of murine leprosy. On the other hand, cats, guinea pigs, rabbits, and birds were resistant to infection with these bacilli.

In this report, we have attempted to identify differences between cat and murine leprosy bacilli based on the characteristics of the cultivated bacilli *in vitro* and on the behavior of the bacilli after inoculation into cats.

MATERIALS AND METHODS

Cat leprosy bacillus. A strain of cat leprosy bacilli isolated and maintained in mice by Leiker was kindly supplied to Portaels in Belgium. The isolate originated from a cat with the disease, and the strain had been maintained in mouse passage. The liver and spleen from a mouse infected with these bacilli were generously donated by Dr. F. Portaels.

Inoculation of cat leprosy bacilli to mice. A bacterial suspension was made from the frozen infected spleen (after thawing) of the mouse supplied by Dr. Portaels. A total of 0.2 g of spleen was homogenized with 20 ml of HAM-F12. The homogenate was centrifuged at 200 × *g* × 5 min to remove the coarse tissue debris, and 0.1 ml of the supernatant was injected into the subcutaneous chest region of ten CBA mice.

Cultivation. The leproma was minced in a porcelain mortar and pestle until dry, then mixed with an approximately equal volume of 2% w/v sodium hydroxide solution, and one platinum loop of alkali paste was inoculated on 1% Ogawa egg yolk medium according to Ogawa's isolation method ([8]). Hemin 1.6 mg was added to the 100 ml of basal 1% Ogawa egg yolk medium to promote the growth of the bacillus ([5]).

Biochemical identification. The cultivated cat leprosy bacilli were identified by the method reported in *Kekkaku* of the Japanese Tuberculosis Association ([2]).

Cytochromes. Whole cell suspensions of the cultivated cat leprosy bacilli were used to detect cytochromes. The oxido-reductive difference spectrum of the cytochromes was measured under reduction by comparing whole cell suspensions treated with a few grains of sodium hydrosulfite with the same untreated cell suspension as a control using an automatic scanning Union Giken spectrophotometer.

Identification of coproporphyrin. We used a method similar to that used for determinations of the coproporphyrin produced in 1% Ogawa egg yolk medium by murine leprosy bacilli in culture ([7]). After the cat leprosy bacilli were cultivated on 1% Ogawa egg yolk medium, omitting malachite green, the bacilli were harvested and the residual slant medium was washed with distilled water overnight. The red pigment which was produced on the 1% Ogawa egg yolk medium was then extracted with 1 N HCl solution. The extracted pigment was absorbed onto a talc column, and the coproporphyrin was then extracted from the red-colored talc with a 1:1 solution of water:acetone. The coproporphyrin solution was then developed by ascending paper chromatography

[1] Received for publication on 21 February 1986; accepted for publication in revised form on 12 May 1986.

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TABLE 1. *Biological and biochemical identification of cat and murine leprosy bacilli.*

	Cat leprosy bacilli	Murine leprosy bacilli
Culture temperature		
28°C	++	++
37°C	++	++
45°C	++	++
Colony color	Pale yellow	Pale yellow
Colony type	Rough	Rough
Growth	Slow	Slow
Catalase		
heat resistant	−	−
Phosphatase		
heat resistant	−	−
Amidase		
Urease	−	−
Nicotine amidase	+	+
Pyridine amidase	+	+
Hydrolysis Tween 80	−	−
Arylsulfatase	−	−
Niacin	−	−

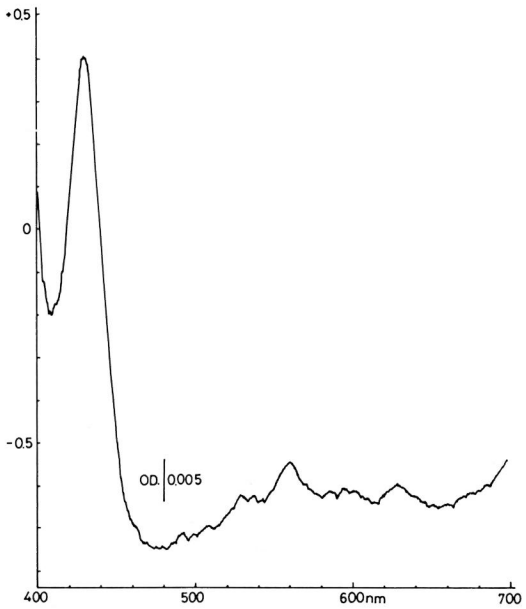

FIG. 1. Difference spectrum of cytochromes reduced by sodium hydrosulfite in cultivated cat leprosy bacilli. Amounts of bacilli were dry weights of 5 mg/ml.

with 2,6-lutidine (2,6-dimethyl pyridine): water (6:4) for 16 hr at 20°C ([7]).

Cat inoculations. Bacillary suspensions of cat leprosy bacilli and murine leprosy bacilli, Hawaiian strain, were prepared from subcutaneous lepromas from mice. Cat leprosy bacilli and murine leprosy bacilli, each at a concentration of 2×10^7 bacilli/0.1 ml, were inoculated into the right femoral subcutaneous regions of newborn cats.

RESULTS

Inoculation of cat leprosy to mice. A small nodule formed on the injected site 9 months after injection. This leproma had many acid-fast bacilli (AFB) upon examination similar to murine leprosy lepromas, but was not suitable for cultivation because of being too small. A bacterial suspension was made from this leproma and was inoculated into five CBA mice. After 5 months, all five mice showed large lepromas at the sites of inoculation on the chest region. These lepromas were somewhat more firm than the usual murine leprosy leproma, and had the appearance of lepromas produced in rats by the injection of murine leprosy bacilli. Three of the lepromas out of five mice were used for the *in vitro* isolation of cat leprosy bacilli.

Isolation of cat leprosy bacillus. Alkali-treated emulsions of lepromas nos. 1, 2, and 3 were inoculated on 10 tubes of Ogawa yolk medium each. Five tubes, 3 tubes, and 8 tubes out of the 10 tubes inoculated from lepromas nos. 1, 2, and 3 were positive at the third successive cultivation. To investigate whether or not the isolated bacilli could produce a leproma in mice, one isolate in the fourth successive cultivation of cat leprosy bacilli from leproma no. 1 was inoculated to CBA mice in a dose of 10^7/0.1 ml. All five mice produced big lepromas

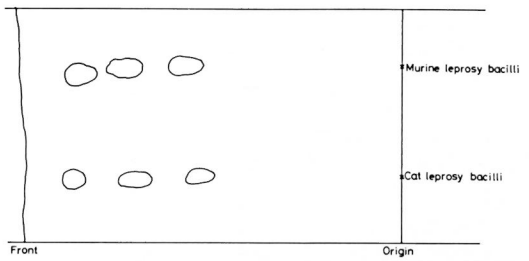

FIG. 2. Red pigments from murine and cat leprosy bacilli by paper chromatography developed with 2,6-lutidine : water (6:4) at 20°C for 16 hr. Red fluorescence spots were marked under ultraviolet lamp.

FIG. 3. Cat leprosy leproma produced in newborn cat (Cat no. 1, Table 2) 4 months after infection.

FIG. 4. Murine leprosy leproma produced in newborn cat (Cat no. 1, Table 3) 4 months after infection.

in the inoculated region at 6 months after inoculation.

Biologic and biochemical identification. Many characteristics of the cultivated cat leprosy bacilli were identical to that of murine leprosy bacilli as seen in Table 1.

Cytochromes. Cat leprosy bacilli have cytochrome b_1 which has an absorption peak at 426 nm, a Soret band at 560 nm, and a cytochrome a_2-like peak at 630 nm, as seen in Figure 1. These results are identical to those found with murine leprosy bacilli.

Red pigment. Cat leprosy bacilli produce much red pigment on 1% Ogawa egg yolk medium. This is coproporphyrin III, which is identical to that found with murine leprosy bacilli. This is shown in the paper chromatography in Figure 2.

Inoculation into cats. Since the cat is a resistant animal to cat leprosy bacilli ([4]), we utilized newborn cats as our experimental animals. A total of 15 newborn cats were inoculated with cat leprosy bacilli and seven with murine leprosy bacilli. Due to an epidemic of a type of conjunctivitis, only seven animals which had been inoculated with cat leprosy bacilli and only four which had been inoculated with murine leprosy bacilli survived. Findings in individual cats are show in Tables 2 and 3. Five of seven cats inoculated with cat leprosy bacilli developed lepromas in the region of injection 4 months after inoculation. One of these lepromas is shown in Figure 3. Three out of four cats inoculated with murine leprosy bacilli developed lepromas at the site of injection after 4 months. One of these lepromas is shown in Figure 4.

At 4 months, the lepromas were biopsied. The biopsies were smeared on a glass slide and then the tissue was fixed with 20% Formalin for histopathological sections. Many globi of AFB were detected in smear preparations of all of the lepromas. Figure 5 shows a tissue section of a leproma in a mouse caused by cat leprosy bacilli. The number of AFB in cats produced by cat leprosy bacilli (Fig. 6) are fewer than in mice

TABLE 2. *Newborn cats infected with cat leprosy bacilli.*

Animal	Infection[a]	Bacilli smear	Killed (mos.)	Dissection findings								Reinfection[b] 10^8/0.1 ml	Findings
				Infected region			Lymph nodes				Spleen/ liver changes		
							Popliteal		Inguinal				
				Lep-roma	Case-ation	Bacilli	Enlarged	Bacilli	Enlarged	Bacilli			
No. 1, ♀	Leproma, ulcer, 4 mos.; ulcer healed; hair grew, 7 mos.	Globi	7	−	−	−	+	−	−	−	−	−	−
No. 2, ♂	Leproma, ulcer, 4 mos.; ulcer healed; hair grew, 8 mos.	Globi	10	−	−	−	+	−	−	−	−	9 mos. Right, cat leprosy bacilli Left, murine leprosy bacilli	Granuloma AFB ++ Granuloma bacilli ++
No. 3, ♂	—	−	8	−	−	−	−	−	−	−	−	−	−
No. 4, ♀	Leproma, 4 mos.	Globi	5	−	−	−	+	−	−	−	−	−	−
No. 5, ♀	—	−	8	−	−	−	−	−	−	−	−	−	−
No. 6, ♂	Leproma, 4 mos.; leproma absorbed; no ulcer, 7 mos.	Globi	8	+	+	+	+	−	−	−	−	7 mos. Right, cat leprosy bacilli Left, murine leprosy bacilli	Granuloma bacilli ++ Granuloma bacilli ++ Hemorrhagic
No. 7, ♀	Leproma, ulcer, 4 mos.; ulcer healed; hair grew, 7 mos.	Globi	8	+	−	+	+	−	−	−	−	−	−

[a] Cat leprosy bacillus grown in mouse.
[b] Cat and murine leprosy bacilli grown in mouse.

TABLE 3. *Newborn cats infected with murine leprosy bacilli.*

Animal	Infection[a]	Bacilli smear	Killed (mos.)	Dissection findings								Reinfection[b] 10^8/0.1 ml	Findings
				Infected region			Lymph nodes				Spleen/ liver changes		
							Popliteal		Inguinal				
				Lep-roma	Case-ation	Bacilli	Enlarged	Bacilli	Enlarged	Bacilli			
No. 1, ♂	Leproma, 4 mos.; leproma absorbed; no ulcer, 6 mos.	Globi	8	–	–	–	+	–	–	–	–	7 mos. Right, cat leprosy bacilli Left, murine leprosy bacilli	Granuloma AFB + Granuloma AFB +
No. 2, ♂	Big leproma, 4 mos.; no ulcer, leproma enlarged, 6 mos.	Globi	8	+	–	+	+	+	+	+	–	7 mos. Right, cat leprosy bacilli Left, murine leprosy bacilli	Granuloma AFB – Granuloma AFB –
No. 3, ♂	Leproma, 4 mos.; leproma absorbed, no ulcer, 6 mos.	Globi	5	–	–	–	+	–	–	–	–	–	–
No. 4, ♂	–	–	8	–	–	–	–	–	–	–	–	–	–

[a] Murine leprosy bacillus grown in mouse.
[b] Murine and cat leprosy bacilli grown in mouse.

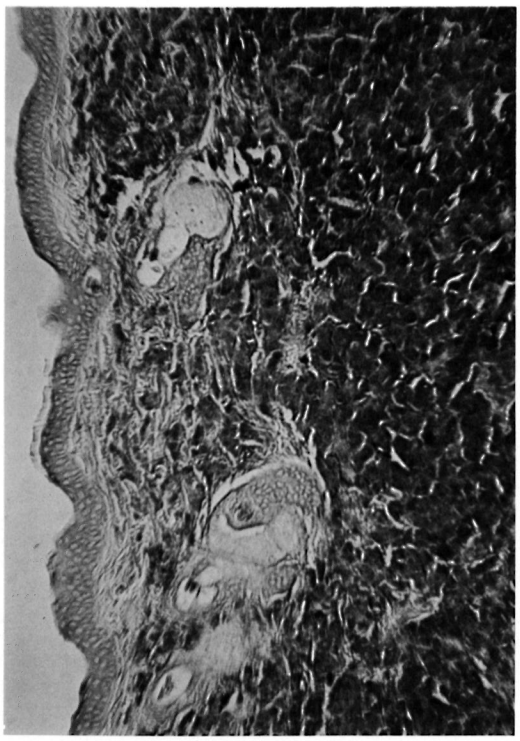

FIG. 5. Section specimen of cat leprosy leproma produced in mouse (Ziehl-Neelsen ×100).

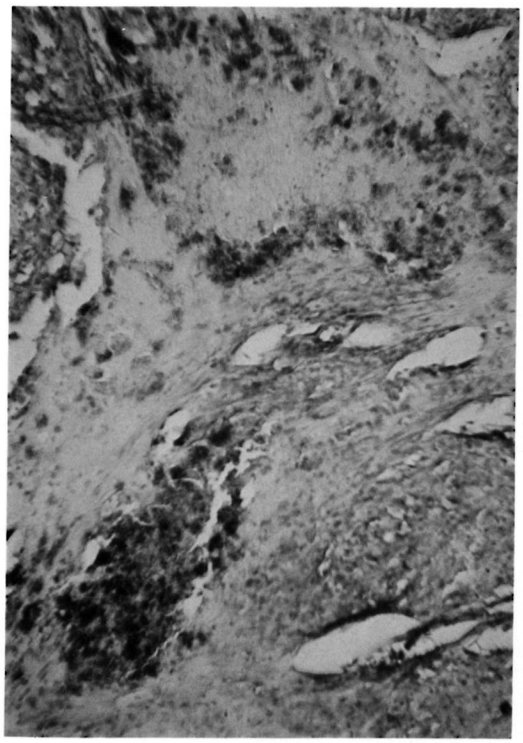

FIG. 6. Section specimen of cat leprosy leproma produced in cat (Cat no. 1, Table 2) (Ziehl-Neelsen ×100).

with lepromas caused by cat leprosy bacilli (Fig. 5). Both in the lepromas caused by cat leprosy bacilli and in those caused by murine leprosy bacilli many globi of AFB could be seen under high magnification (Fig. 7). Many bacilli were especially observed in the necrotic tissue of the lepromas as seen in Figures 6 and 12. The lepromas became ulcerated and autolyzed. After 2–3 months, the ulcer healed and hair again grew on it. In other cases, the lepromas absorbed without ulcer formation. After 7–10 months, the areas of inoculation were dissected after the animals were sacrificed. A leproma remained in only 3 out of 8 cats inoculated with cat leprosy bacilli; lepromas had all disappeared in the other 5 animals inoculated with cat leprosy bacilli. Figure 8 shows a large area of caseation caused by cat leprosy bacilli in a newborn cat. Figure 9 shows a large granuloma caused by murine leprosy bacilli in a newborn cat. In this case, since AFB were very few in the stamp smear of the tissue section from this leproma, the leproma was classified as a productive-type granuloma. Popliteal and inguinal lymph nodes draining the sites of injection were enlarged in some cases, but AFB could be detected in only one case. No other pathologic changes were found in the subcutaneous areas or internal organs.

Superinfection. Secondary infections of these primarily infected cats were done with murine and cat leprosy bacilli. Cat leprosy bacilli (10^8/0.1 ml) and murine leprosy bacilli (10^8/0.1 ml) were injected into the right and left femoral subcutaneous regions, respectively, in cats which had undergone a primary infection. After 1 month, a granuloma was formed at each of the injection sites and multiplication of AFB was seen. In only one animal, a cat which had a persistent large leproma induced by the primary infection with murine leprosy bacilli, was there no reaction at the sites of the secondary infections.

Inoculation into adult cats. A litter of eight cats, 6 months of age, was divided into two groups of four each. One group received cat leprosy bacilli in a dose of 1.6×10^8/0.6 ml and the other group received murine leprosy

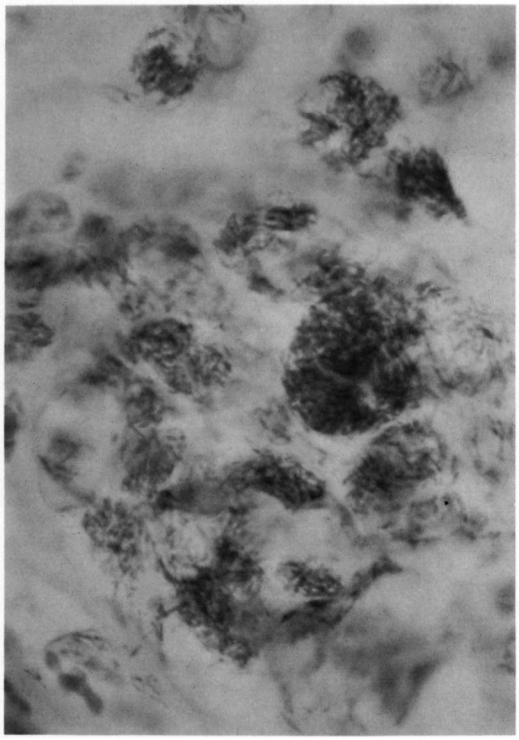

FIG. 7. Section specimen of cat leprosy leproma produced in cat (Cat no. 1, Table 2) (Ziehl-Neelsen ×1000).

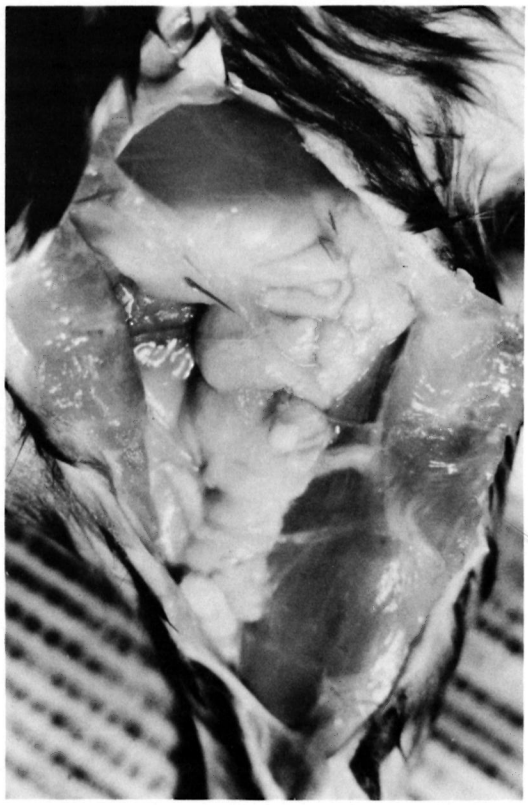

FIG. 8. Dissection finding of caseation in newborn cat (Cat no. 6, Table 2) induced by infection with cat leprosy bacilli.

bacilli in a dose of 1.5×10^8/0.5 ml injected into the femoral subcutaneous region. Results of individual cats are shown in Tables 4 and 5. All cats showed a reddish enlarged leproma at the injection region after 2 months (Figs. 10 and 11). Biopsies were taken from the lepromas and a smear preparation and tissue section prepared from each. In histopathologic findings, few AFB were seen but neutrophilic infiltration was seen (Fig. 13). Many AFB were seen in the necrotic areas of the tissue section of the leproma, but there were no AFB detected in productive areas of the granuloma without necrosis (Fig. 12). After 3–5 months, the sites of the injections were dissected, and lepromas and AFB were found in all of the dissected cases. Figure 14 shows the leproma produced in an adult cat with murine leprosy bacilli. Popliteal and inguinal lymph nodes were enlarged in some cases, but AFB were not detected in any cases. There were no new lepromas or other pathologic changes found in any of the subcutaneous areas or the internal organs.

DISCUSSION

It was difficult to distinguish between cat and murine leprosy bacilli based on the biochemical properties. We therefore initiated animal inoculations into cats with both cat and murine leprosy bacilli. Our results showed that the cat is a susceptible animal to murine leprosy bacilli. Leiker [4] reported that cats are resistant to cat leprosy bacilli. However, the present results show that newborn cats are fairly susceptible to the cat leprosy bacillus, at least after having been passed for a number of years in mice. Primary lepromas were produced in newborn cats in 3–4 months, but only 2 months were required to produce lepromas in adult cats. This difference may be because adult cats mount a stronger tissue reaction, making the primary leproma more evident at an earlier stage. There were more AFB in the lepromas of newborn cats than in those of adult cats. Some newborn cats were not sus-

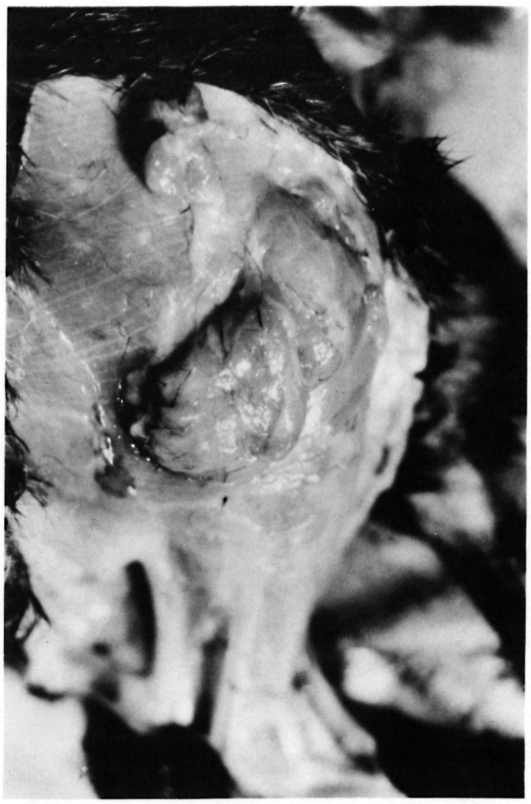

FIG. 9. Dissection finding of leproma in newborn cat (Cat no. 2, Table 3) induced by infection with murine leprosy bacilli.

FIG. 10. Cat leprosy leproma produced in adult cat (Cat no. 3, Table 4) 2 months after infection.

ceptible to either cat or murine leprosy bacilli. This could be due to genetic differences.

Both cat and murine leprosy bacilli produced lepromas in the cats but the disease was quite different from leprosy, and it may be more appropriate to refer to the disease as a mycobacteriosis in cats. We have not had the opportunity to observe naturally acquired cat leprosy and, therefore, we refrain from describing cat leprosy. Mice, rats, and hamsters were susceptible to murine leprosy bacilli, and the bacilli induced progressive diseases to the internal organs in these species. In the cat, the disease only produced a mycobacteriosis which was not progressive to internal organs. Only one cat infected with murine leprosy bacilli developed a large leproma for a prolonged period of time without ulcer formation, and this cat did not develop secondary infection with cat or murine leprosy bacilli. This cat could not be reared for a long period of time. Therefore, we were not able to observe the appearance or the development of disease in this cat which could possibly have been in a negative state of immunity.

SUMMARY

Cat leprosy bacilli passaged in mice could be isolated on 1% Ogawa yolk medium. The isolated cat leprosy bacilli which were cultivated successively four times on 1% Ogawa yolk medium produced a leproma in mice. All characteristics of the isolated cat leprosy bacillus were the same as isolated murine leprosy bacillus, as follows: a) slow grower, b) light yellowish-white rough colony, c) production of much coproporphyrin on the medium, d) heat-resistant catalase negative, e) heat-resistant phosphatase negative, f) arylsulfatase negative, g) niacin negative, h) hydrolysis of Tween 80 negative, i) urease negative, j) nicotinamidase positive, k) pyrazinamidase positive, l) cytochrome b_1 at 560 nm positive, m) cyto-

TABLE 4. *Adult cats infected with cat leprosy bacilli.*

Animal	Infection	AFB smear	Killed (mos.)	Dissection findings							
				Infected region			Lymph nodes				Spleen/ liver changes
							Popliteal		Inguinal		
				Leproma	Caseation	Bacilli	Enlarged	Bacilli	Enlarged	Bacilli	
No. 1, ♂	Leproma, reddish, enlarged, 2 mos.; polymorphonuclear leukocyte ++	+	5	+	−	+	−	−	−	−	−
No. 2, ♂	Leproma, enlarged, 2 mos.; not reddish	+	3	−	−	+	−	−	−	−	−
No. 3, ♀	Leproma, reddish, enlarged, 2 mos.; polymorphonuclear leukocyte ++	+	3	+++	−	+	+	−	+	−	−
No. 4, ♀	Leproma, enlarged, 2 mos.; not reddish	+	5	+++	−	++	+	−	+	−	−

TABLE 5. *Adult cats infected with murine leprosy bacilli.*

Animal	Infection	AFB smear	Killed (mos.)	Dissection findings							
				Infected region			Lymph nodes				Spleen/ liver changes
							Popliteal		Inguinal		
				Leproma	Caseation	Bacilli	Enlarged	Bacilli	Enlarged	Bacilli	
No. 1, ♂	Leproma, reddish, enlarged, 2 mos.; polymorphonuclear leukocyte ++	+	5	+	−	+	+	−	−	−	−
No. 2, ♂	Leproma, reddish, enlarged, 2 mos.	++	5	+	−	+	+	−	+	−	−
No. 3, ♀	Leproma, reddish, enlarged, 2 mos.	++	3	+	−	+	+	−	−	−	−
No. 4, ♀	No leproma	−	3	+	−	+	−	−	−	−	−

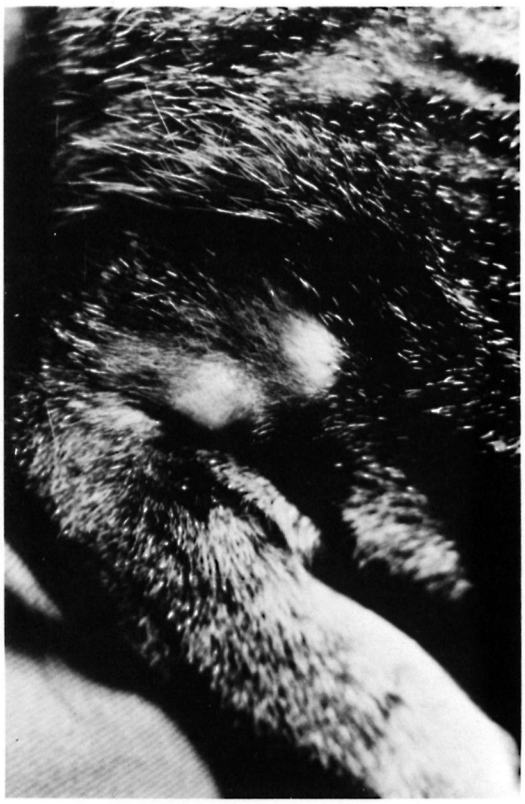

FIG. 11. Murine leprosy leproma produced in adult cat (Cat no. 2, Table 5) 2 months after infection.

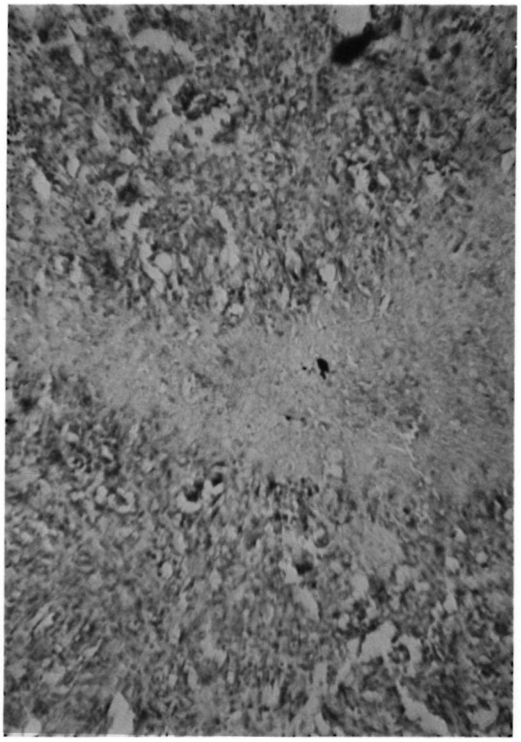

FIG. 12. Section specimen of murine leprosy leproma produced in adult cat (Cat no. 2, Table 5) (Ziehl-Neelsen ×100).

chrome a_2 at 630 nm positive, and n) cytochrome c at 550 nm negative. Cats are susceptible to both cat and murine leprosy bacilli; the bacilli produced a leproma in a newborn cat at 3 to 4 months and in an adult cat at 2 months after inoculation. Many globi of acid-fast bacilli (AFB) were observed in the histopathological sections and the smear preparations of the newborn cat's lepromas, especially in the necrotic areas of the lepromas. Many AFB and polymorphonuclear leukocytes were seen in the histopathological sections and the smear preparations of the adult cat's lepromas. These lepromas formed ulcers by autolysis and healed or absorbed without ulcer formation over the course of months. Large lepromas remained for a long time without ulcer formation and caseation in some cats. Secondary infections with cat and murine leprosy bacilli were done respectively to the right and left femoral subcutaneous regions of newborn cats carrying primary lepromas. After one month, granulomas in which many AFB were observed were produced in both infection sites. Cats are susceptible to infection with cat and murine leprosy bacilli; however, the bacilli did not invade progressively to internal organs or other subcutaneous areas. Cat leprosy bacilli which were passaged in the mouse are identical to murine leprosy bacilli.

RESUMEN

Los bacilos de la lepra de los gatos inoculados en ratones pudieron cultivarse en el medio de Ogawa con yema de huevo al 1%. Los bacilos de la lepra de los gatos que fueron cultivados suscesivamente en 4 ocasiones sobre el medio de Ogawa produjeron lepromas en los ratones. Todas las características de los bacilos aislados de la lepra de los gatos fueron las mismas que para los bacilos aislados de la lepra murina: a) crecimiento lento, b) colonias rugosas blanco-amarillentas, c) producción de mucha coproporfirina en el medio, d) negativos para catalasa resistente al calor, e) negativos para fosfatasa resistente al calor, f) arilsulfatasa negativos, g) niacina negativos, h) negativos a la hidrólisis del Tween 80, i) ureasa negativos, j) nicotinamidasa positivos, k) pirazinamidasa positivos, l) citocromo b_1 a 560 nm positivos, m) citocromo a_2 a 630

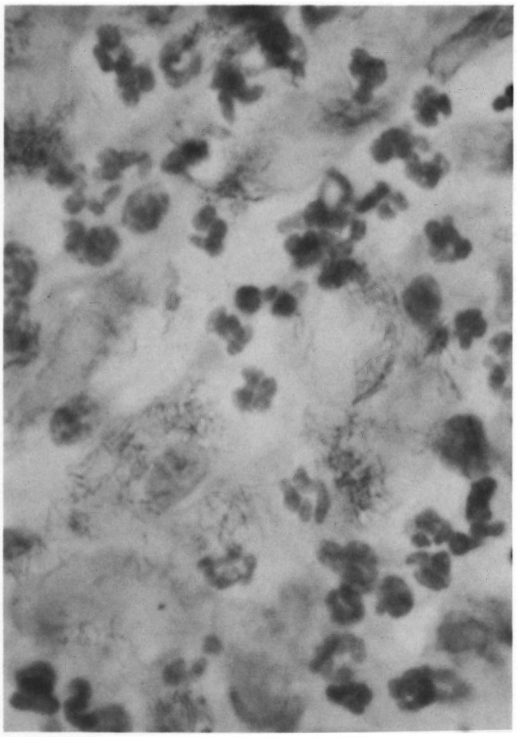

FIG. 13. Section specimen of murine leprosy leproma produced in adult cat (Cat no. 2, Table 5) (Ziehl-Neelsen ×1000).

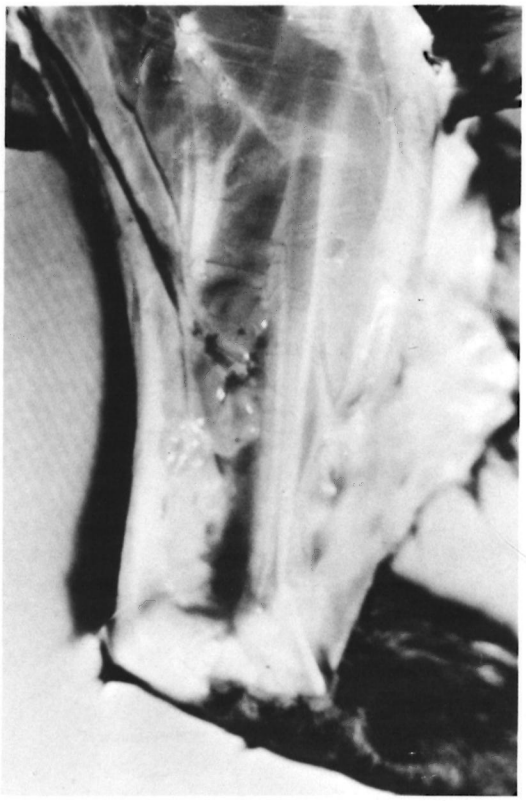

FIG. 14. Dissection finding of leproma in adult cat (Cat no. 2, Table 5) induced by infection of murine leprosy bacilli.

nm positivos, y n) citocromo c a 550 nm negativos. Los gatos son susceptibles a los bacilos de la lepra de los gatos y de los ratones; los bacilos producen un leproma en un gato recién nacido a los 3 o 4 meses y en un gato adulto a los 2 meses después de la inoculación. En las secciones histopatológicas y en los extendidos de los lepromas de los gatos recién nacidos se observaron muchas globias de bacilos ácido resistentes (BAR), especialmente en las areas necróticas de los lepromas. En las secciones histopatológicas y en los extendidos de los lepromas de los gatos adultos, se observaron muchos BAR y leucocitos PMN. Estos lepromas formaron úlceras por autolísis y sanaron o se absorbieron sin formación de úlcera a lo largo de varios meses en algunos gatos. También se indujeron infecciones secundarias con los bacilos de la lepra murina y de los gatos en las regiones femorales derecha e izquierda, respectivamente, de gatos recién nacidos portadores de lepromas primarios. Después de 1 mes, se observaron granulomas con muchos BAR en ambos sitios de infección. Los gatos son susceptibles a la infección con los bacilos de la lepra de los gatos y de los ratones, sin embargo, los bacilos no invaden ni los órganos internos ni otras áreas subcutáneas. Los bacilos de la lepra de los gatos que fueron pasados por ratones, son idénticos a los bacilos de la lepra murina.

RÉSUMÉ

Des bacilles de la lèpre du chat ont pu être isolés sur un milieu au jaune d'oeuf d'Ogawa, après passage chez la souris. Les bacilles de la lèpre du chat ainsi isolés, lorsqu'ils avaient été cultivés avec succès quatre fois sur un milieu à 1% au jaune d'oeuf d'Ogawa, ont entraîné un léprome chez la souris. Toutes les caractéristiques relevées chez les bacilles de la lèpre du chat ainsi isolés, étaient semblables à celles observées chez le bacille de la lèpre murine, à savoir: a) une croissance lente; b) des colonies rugueuses de couleur blanc jaunâtre pâle; c) la production d'une grande quantité de coproporphyrine dans le milieu; d) l'absence de production de catalase résistante à la chaleur; e) l'absence de production de phosphatase résistante à la chaleur; f) l'absence de production d'arylsulfatase; g) l'absence de production de niacine; h) l'absence d'hydrolyse du Tween 80; i) l'absence de production d'uréase; j) la production de nicotinamidase; k) la production de pyrazinamidase; l) la mise en évidence de cytochrome b_1 à 560 nm; m) la mise en évidence de cytochrome a_2 à 630 nm; n) l'absence de cytochrome c à 550 nm. Les chats sont susceptibles à la fois aux bacilles de la lèpre du chat et à ceux de la lèpre murine. Les bacilles en-

traînent la production d'un léprome chez le chat nouveau-né trois à quatre mois après l'inoculation, et deux mois après chez le chat adulte. On a observé de nombreux globi de bacilles acido-résistants (AFB) dans les coupes histopathologiques et dans les préparations de frottis obtenues à partir de lépromes de chats nouveau-nés, spécialement lorsque ces biopsies étaient prélevées dans les zones nécrotiques des lépromes. On a également pu observer de nombreux bacilles acido-résistants et des leucocytes polymorphonucléaires dans les coupes histopathologiques et dans les préparations de frottis recueillies au niveau de lépromes de chats adultes. Ces lépromes produisent des ulcères par autolyse; ils guérissent ou sont résorbés au cours des mois sans formation d'ulcère. Chez certains chats, des lépromes étendus peuvent persister pendant longtemps, sans formation d'ulcère ni caséification. On a provoqué des infections secondaires avec des bacilles de la lèpre du chat et des bacilles murins, respectivement dans les régions sous-cutanées fémorales droite et gauche, chez des chats nouveau-nés porteurs de lépromes primaires. Après un mois, on a observé aux deux endroits d'infection la formation de granulomes, avec nombreux bacilles acido-résistants. Les chats sont donc susceptibles à une infection par les bacilles de la lèpre du chat et par ceux de la lèpre murine; les bacilles, toutefois, n'envahissent pas progressivement les organes internes ou d'autres régions cutanées. Après passage chez la souris, les bacilles de la lèpre du chat sont identiques aux bacilles de la lèpre murine.

Acknowledgments. This work was partially supported by the Sasakawa Memorial Health Foundation and grants from the U.S.–Japan Cooperative Medical Science Program and the Osaka Dermatological Foundation.

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