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The Abominations of Leviticus Revisited

A Commentary on Anomaly in Symbolic Anthropology[1]

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Marvin Harris's materialist critique of theories of culture sees little significant difference between the perspectives of cognitive anthropologists, students of folk classification in the ethnoscience tradition, and symbolic anthropologists in the French structuralist tradition (Harris, 1968, pp. 598–600). Both schools are concerned with language data and see the conceptual realities of native speakers as objects worthy of study in their own right. Thus, from the materialist perspective cited, cognitive and symbolic anthropology are but two manifestations of one idealist fallacy.

Despite the commonalities, there has been little or no theoretical effort common to these two "idealist" approaches. Even when the research focus is restricted to the domains of folk biology—the classification of plants and animals—the two schools fail to interact productively. We have penetrating analyses of totemism by Lévi-Strauss and of ritually salient animals by Leach and Douglas. On the other hand, Conklin and Berlin have stimulated a body of research and theoretical speculation concerning the particular and the universal in how people organize their understanding of plants and animals.

Though Bulmer's work contributes to both approaches and Lévi-Strauss used Conklin's and Frake's data in his *Savage Mind* (Lévi-Strauss, 1966), there is no synthesis of symbolic and cognitive anthropology.

The present essay grew out of my attempt to understand why no synthesis has occurred.[2] In lieu of proposing a synthetic programme, I will look at a classic case of symbolic analysis from an ethnoscientific perspective. The case is that of the biblical abominations of Leviticus and Deuteronomy, which raises the more general issue of the significance of anomalous categories in systems of sacred symbols. The contrast in the two approaches is instructive. In passing, I hope to show that the differences between symbolic and cognitive anthropology reflect significant differences in the role ascribed to material "reality".

Briefly, the point at issue is: why are certain species of animals ascribed special ritual potency by a given culture? Why are certain species promoted to totemic status, others treated matter-of-factly? Why are some edible, others inedible; some clean, others defiling; one permitted, another taboo? (see Ellen, 1972; Tambiah, 1969; Wijewardene, 1968). Symbolic anthropologists rightly reject piecemeal explanations which seek to explain each animal's role by reference either to "etic" properties of the particular animal or its material impact on the human society involved. A different explanatory principle might need to be invoked for each animal. The assertion that pigs are prohibited as food because they may pose a threat of trichinosis is a familiar example. Not only are such approaches logically inelegant, they fail to provide an explanation for cultural variation, since immutable characteristics of the organism are cited by way of explanation. They explain too little and they explain too much; too little in their restricted application to only one, or a small set, among the species prohibited, too much in their implied universal applicability. By contrast, symbolic anthropologists have sought a consistent and comprehensive explanation in the *systemic* properties of particular cultures. In Mary Douglas's words, "The only way in which pollution ideas make sense is in reference to a total structure of thought . . ." (1966, p. 41). In particular, the mediating role of structurally ambiguous concepts within the particular cultural framework is stressed as an explanatory principle.

It is noteworthy that in pursuing the laudable goal of consistent and comprehensive explanations, it may be necessary to reject the native rationale, the "emic" theory. For example, Lele women must take

elaborate ritual precautions in handling fish. Douglas notes that if we

> interpret this behavior by saying that they wish to avoid any confusion of the dry and the water elements, . . . this would not be a translation of any Lele explanation. If asked why they do it, they reply: "To prevent an outbreak of coughing and illness".
>
> (1957, p. 52)

Douglas avers that

> from the point of view of religious symbolism it is not relevant to ask how accurate is Lele observation of natural phenomena. . . . A symbol based on mistaken information can be fully effective as a symbol. . . .
>
> (1957, p. 56)

In short, the explanatory strategy of symbolic anthropology leads to the definition of the material context as beside the point.

Leach illustrates this viewpoint in an extreme fashion in his classic study of "Animal categories and verbal abuse" (1964). For Leach,

> The physical and social environment of a young child is perceived as a continuum . . . The child . . . is taught to *impose* upon his environment a . . . grid which serves to distinguish the world as being composed of a large number of separate things, each labelled with a name.
>
> (1964, p. 34)

Thus material reality is a cultural construct and, as such, cannot serve to explain cultural facts. The power of ambiguity resides in the threat it poses to the constructed cultural order: cultural order is at war with natural disorder.

> This contrast between human Culture and Nature is very striking. Visible, wild Nature is a jumble of random curves; it contains no straight lines and few regular geometrical shapes of any kind. But the tamed, man-made world of Culture is full of straight lines, rectangles, triangles, circles and so on.
>
> (Leach, 1972, p. 51)

Anyone who has marvelled at the order of a beehive will perceive the ethnocentrism in this characterization of nature. Yet Douglas's renowned analysis of the biblical abominations detailed in Leviticus and Deuteronomy is inspired by just such an extreme dichotomy between ideal culture and material nature. Douglas and Leach have served us well by bringing the power of anomaly to the fore and by demanding consistent explanations of, and intellectual respect for, the ideas of non-Western peoples. However their lack of concern for the material context of the symbolic systems they analyse limits the significance of their arguments.

Though few would dispute the relevance of the empirical reality for a people's economic life, the relevance of that reality for our understand-

TABLE 1
The edible "beasts" (Deuteronomy 14:4–5)

Driver (1903)	Revised standard	King James	Scientific name
Ox	Ox	Ox	*Bos taurus*
Sheep	Sheep	Sheep	*Ovis aries*
Goat	Goat	Goat	*Capra hircus*
Hart (⊃hind)	Hart	Hart	*Cervus elephas*
Gazelle	Gazelle		*Gazella* spp.
Roebuck	Roebuck	Roebuck	*Capreolus capreolus*
		Fallow deer[a]	
Wild goat	Wild goat	Wild goat	*Capra ibex*
	Ibex[a]		
Addax		Pygarg	*Addax nasomaculatus*
Antelope	Antelope		*Oryx leucoryx*
		Wild ox[a]	
Mountain-sheep	Mountain-sheep		*Ovis ammon*
		Chamois[a]	

[a]See Driver (1903, pp. 159–60).

ing of religious symbolism may not be granted so readily. However, consider the eminently edible animals of the biblical texts of Douglas's well known analysis (Table 1). The biblical list is as follows: ox, goat, sheep, wild goat, mountain-sheep, hart, roebuck, gazelle, addax and the antelope or oryx.[3] These ten folk species constitute an exclusive and exhaustive listing of the species of the artiodactyl sub-order Ruminantia known from the home range of the Hebrews (Table 2). In modern folk biology the list constitutes a covert intermediate taxon—unnamed yet corresponding closely to a supra-specific scientific taxon (for definitions, see Berlin, 1973; for a discussion of the correspondence of

TABLE 2
Mammals of the Middle East[a]

Orders/ sub-orders	Families	Genera/species
Insectivora (5/7)[b]	Erinaceidae	3/3[b] (hedgehogs)
	Soricidae	2/4 (shrews)
Chiroptera (15/28)	eight families	(bats)
Primates (1/1)	Hominidae	*Homo sapiens*

Table 2 *continued*

Carnivora[c] (17/23)		
Arctopoidea	Mustelidae	6/6 (marten, polecat, weasel, badger, honey badger, otter)
	Ursidae	*Ursus arctos* (bear)
Herpestoidea	Viverridae	2/2 (mongoose, genet)
	Hyaenidae	*Hyaena hyaena* (hyena)
Cynofeloidea	Canidae	*Canis*/3 (dog, wolf, jackal)
		Fennecus zerda (fennec fox)
		Vulpes/2 (foxes)
	Felidae	*Acinonyx jubatus* (cheetah)
		Caracal caracal (caracal)
		Felis/3 (cats)
		Panthera/2 (lion, leopard)
Hyracoidea (1/1)	Procaviidae	*Procavia capensis* (hyrax)
Perissodactyla (1/3)	Equidae	*Equus*/3 (ass, horse, onager)
Artiodactyla (11/16)		
Nonruminantia	Suidae	*Sus scrofa* (pig)
Tylopoda	Camelidae	*Camelus dromedarius* (dromedary)
Ruminantia	Cervidae	3/3 (red deer [hart, hind], roe deer, fallow deer)
	Bovidae	*Addax nasomaculatus* (antelope)
		Bos taurus (cattle)
		Capra/3 (goat, ibex, wild goat)[d]
		Gazella/3 (gazelles)
		Oryx leucoryx (oryx)
		Ovis/2 (sheep, mouflon)
Lagomorpha (1/1)	Leporidae	*Lepus capensis* (hare)
Rodentia (20/35)		
Sciuromorpha	Sciuridae	*Sciurus anomalus* (squirrel)
Hystrichomorpha	Hystrichidae	*Hystrix indica* (porcupine)
Myomorpha	Dipodidae	2/3 (jerboas)
	Muscardinidae	2/2 (dormice)
	Spalacidae	*Spalax leucodon* (mole rat)
	Muridae	5/9 (true rats, mice, etc.)
	Cricetidae	8/18 (hamsters, gerbils, jirds, voles)
TOTAL		
9 orders	30 families	100 + species

[a]From Harrison (1972).
[b]The numbers separated by obliques summarize the number of genera and species in the region included in the taxon cited.
[c]Fissiped carnivore superfamilies follow the phylogeny of E. Thenius (Dathe, 1975, p. 23).
[d]The wild goat (*Capra aegagrus*) is native to Kurdistan and N.E. Iraq, thus probably unknown to the Hebrews.

TABLE 3
The unclean "beasts" (Leviticus 11:4–7; Deuteronomy 14:7–8)

Revised standard	King James	Scientific name
Camel	Camel	*Camelus dromedarius* (dromedary)
Hare	Hare	*Lepus capensis*
Rock badger	Coney (sic.)	*Procavia capensis* (hyrax)
Swine	Swine	*Sus scrofa* (pig)

folk to scientific taxonomic systems, see Hunn, 1975). Note also that in this case the folk theory needs no qualification. The edible beasts include "every animal that . . . has the hoof cloven in two, and chews the cud" (Deut. 14:6); in short, all ruminant artiodactyls, neatly matching a scientific taxon of presumed phylogenetic relevance.

Consider next the abominations; the pig, camel, hare and rock badger (Table 3). They are alleged to have either cloven hooves or to chew the cud, but not both characteristics. The bulk of the mammals not cited specifically are presumed to exhibit neither character. Many of these are later excluded from edibility by the "paws" criterion (Lev. 11:27). A two-by-two table may be used to illustrate the options (Table 4). Animals which are + cloven hoof, + cud chewing are edible; those which are negative on both criteria are (presumably) inedible as a matter of course. However, the pig is explicitly proscribed due to the "anomalous" character combination, + cloven hoof, − cud chewing. It is interesting to note that scientists likewise classify pigs as "non-

TABLE 4
Anomaly as the off-diagonal cells of a two-by-two table of character co-occurrences

	+ Chew cud	− Chew cud
+ Cloven hoof	Ox, Sheep, Goat, Hart, Gazelle, Roebuck, Wild goat, Addax, Antelope (oryx), Mountain-sheep	Swine (pig)
− Cloven hoof	Camel, Hare, Rock-badger (hyrax)	Remaining mammals

ruminant" artiodactyls (Table 2). The camel, hare and hyrax are similarly proscribed; they are − cloven hoof, + cud chewing. Here the precise meanings of the Hebrew terms translated as "hoof" and "chew cud" appear to differ from lay English and scientific usages. There is semantic overlap clearly, but not semantic equivalence. Though we might debate whether or not hares chew their cud (cf. Lockley, 1964), or if a camel's hooves are cloven, the logical pattern is clear.

Yet a consideration of the scientific classification of mammals may suggest a different sense in which the primary abominations are "anomalous". The hyraxes are placed in a family and order of their own, the Procaviidae of the Hyracoidea, and there is but one species of hyrax in the Middle East (Harrison, 1972). The hare leaves behind its cousins, the rabbits, in Europe and is the sole exemplar of the order Lagomorpha occurring in the region in question. The camel and the pig are even-toed ungulates, sharing this status with the edible ruminants of Table 1. However, the camel and the pig are isolated in sub-orders of their own within the Artiodactyla; the camel in the Tylopoda, the pig in the Nonruminantia. Both have relatives elsewhere, but are unique examples of these sub-ordinal taxa in the Middle East. A review of Table 2 shows that no other species of mammal, with the exception of *Homo sapiens*, is as singular as hare and hyrax in the scientific scheme, and none but the squirrel and porcupine are locally monotypic at the sub-ordinal level.[4] From the scientific perspective these animals are not so much anomalous, i.e. "deviating from the regular arrangement, general rule", as they are *singular*. I will return to this contrast in conclusion.

In short, the scientifically defined relationships of the animals cited predict the boundaries of the distinctions drawn in Deuteronomy (14:3–9), as well as the priestly author/Mary Douglas rationale does. Can we go further, extending this argument where they fail to provide a reasonable explanation? Douglas demurs: "Birds I can say nothing about because, . . . they are *named and not described* and the translation of the name is open to doubt" (my emphasis, Douglas, 1966, p. 55). She offers the hope that,

> If the list of unclean birds could be retranslated . . . , it might well turn out that they are anomalous because they swim and dive as well as fly, or in some other way they are not fully birdlike.
>
> (1966, pp. 56–7)

First, translation problems are hardly unique to the birds; they are

no less certainly translated than are the other animals cited on the average.[5] Nor are the prohibited birds anomalous in terms of either their mode of locomotion or habitat, Douglas's strategy for explaining restrictions placed on fish, reptiles and invertebrates.

Secondly, a retranslation of the prohibited birds has been prepared by the biblical scholar G. R. Driver, in consultation with the noted ornithologist David Lack (Driver, 1955, summarized in Parmalee, 1959). Driver found the list to be carefully organized. The birds listed fall into several groups and within each group the birds are listed in order of decreasing size (Table 5).

TABLE 5
The unclean "birds" (Leviticus 11:13–19, Deuteronomy 14:12–18)[a]

Hebrew name translated (as in Young's *analytical concordance*)	Dr. G. R. Driver's suggestions	Approximate length (in/mm)	Revised standard version	Authorized version
1) *Nesher*	Griffin-vulture (sometimes the golden eagle)	45/1143	Eagle	Eagle
2) *Peres*	Bearded vulture	45/1143	Ossifrage	Ossifrage
3) *Ozniyyah*	Short-toed eagle	27/686	Osprey	Osprey
4) *Daah*	(black) kite	23/584	Kite	Vulture
5) *Ayyah*	Saker falcon	22/559	Falcon	Kite
"after its kind"	Common buzzard	17/432		
6) *Oreb*	Raven	22/559	Raven	Raven
"after its kind"	Rook	18/457		
7) *Bath yaanah*	Eagle owl	18/457	Ostrich	Owl
8) *Tachmas*	Short-eared owl	14/356	Nighthawk	Nighthawk
9) *Shachaph*	Long-eared owl	14/356	Seagull	Cuckoo
10) *Nets*	Kestrel	14/356	Hawk	Hawk
"after its kind"	Sparrow hawk	12/305		
11) *Kos*	Tawny owl	16/406	Owl	Little owl
12) *Shalak*	Fisher owl		Cormorant	Cormorant
13) *Vanshuph*	Screech owl	13/330	Ibis	Great owl
14) *Tishemeth*	Little owl	10/254	Water hen	Swan
15) *Qaath*	Scops owl	8/203	Pelican	Pelican
16) *Racham*	Osprey	33/838	Vulture	Gier eagle
17) *Chasidah*	Stork	40/1016	Stork	Stork
	Heron	38/965		
18) *Anaphah*	Cormorant	33/338	Heron	Heron
19) *Dukiphath*	Hoopoe	12/305	Hoopoe	Lapwing
20) *Atalleph*	Bat		Bat	Bat

[a]From Parmalee (1959, p. 106).

First listed is the griffin-vulture, which may stand for all the large, broad-winged falconiform birds of the region, a total of three vultures and five large eagles. Next is the lammergeier or bearded vulture, unique among birds of its size in its graceful, tapering outline and solitary mien. It is called "the smasher" in Hebrew after its habit of dropping prey from a height in order to shatter its bones. Then the short-toed eagle; it is also called "watcher", a most apt typification (Parmalee, 1959, p. 108). The black kite follows; then a category which seems to have a residual character (see Hunn, 1976, p. 511) as it includes such dissimilar medium-sized raptors as the saker falcon and the buzzard. It seems probable that seven smaller falcons, two other buzzard-like hawks and two small "eagles" were also implicated here. The smallest falconiform species, the kestrels and accipiters, are noted later in the midst of the owls listed. Among the Falconiformes, only the harriers are not provided for explicitly in this listing.

The raven tribe is cited next, the phrase "after its kind" presumably including all six species of the genus *Corvus* known to frequent the region (Heinzel *et al.*, 1972). Then come, species by species, each of Palestine's eight owls, from the huge eagle owl, called "daughter of wilderness", misconstrued as the ostrich in earlier versions, to the tiny scops owl. Somehow, earlier translations had come up with ibises, water hens, swans, seagulls and cuckoos, for one or another of these owls.

The list of inedible birds concludes with three water birds; the osprey or fish hawk, the cormorant and a catch-all category of herons and storks, probably including all the well-known species of the ciconiiform order of the region. Tagged on at the end are the hoopoe and the bat.

Fifteen of the 20 folk categories just enumerated refer to birds of prey, probably barring from the table every known species of the falconiform and strigiform orders. Three additional categories eliminate the genus *Corvus*, all birds of scavenging propensities, and the fish-eating storks, herons and cormorants. Thus 18 of 20 birds cited are meat and fish eaters. The few carnivorous species not cited are relatively small and/or primarily dependent on invertebrate food items, scarcely worthy of the name carnivorous. This food preference is clearly the dominant principle underlying the avian prohibitions. Yet this is not an anomalous trait among birds; carnivorous birds are not less typical of birds than are carnivorous mammals, reptiles and fish of their classes.[6]

The avoidance of carnivorous species as food sources might be

explained as marginally increasing the efficiency of human exploitation of the natural environment (i.e. allowing local human groups to live in the region at an increased population density) by lowering *Homo sapiens* a fraction of a rung on the food chain, an exemplary materialist explanation.[7] In this connection we might note, too, that carnivorous mammals are by implication also considered inedible. Moreover, the acceptable insects, the locusts and their kin, are classic examples of herbivorous insects, sharing with the ruminant ungulates the property of concentrating protein with exceptional efficiency, converting plant tissues otherwise unavailable to humans into a highly digestible form. Locust swarms are analogous to ungulate herds. Their widespread use as food by humans beings accords with their demonstrated value as exceptional sources of animal fats and protein (see Ruddle, 1973).

Our consideration of the material context brings us part way to a solution, at least as close as the symbolic analysts' approximation. However, the goal of a comprehensive and consistent solution still eludes us. Old world bats are not carnivorous in the sense of preying upon vertebrate flesh; and, of course, the bat is not a bird at all, or perhaps it is safer to say that it is the only furred "bird" which bears live young. It is clearly anomalous in Douglas's sense. But what of the hoopoe? R. Meinertzhagen (1964), in his *Birds of Arabia*, provides an answer when he refers to a most notable hoopoe habit of "fouling its nest": it is literally "unclean".[8]

We have now accounted for the birds of the biblical texts, but only by recourse to three distinct principles of explanation. Perhaps the symbolic anthropologists demand too much in requiring logical perfection of any cultural expression. I believe they are led to seek such perfection by virture of their failure to recognize that animal categories are conditioned simultaneously by cognitive processes and by the structure of the world perceived.

In summary, I would suggest that strict reliance on either idealist or materialist principles of cultural explanation is likely to lead to limited understanding. The strict idealist rejects out of hand, for example, the potential relevance of ecological principles relating to trophic levels, stressing the radical independence of human ideas from external constraint. The strict materialist chooses to ignore the significance of pressures for logical consistency in symbolic systems and, I believe, fails to appreciate the creativity of the human response to material patterns. The value of a dialectical perspective—stressing the intimate

interaction of empirical realities and mental processes in the generation of cultural patterns—may be illustrated by considering the contrast between anomaly and singularity touched on earlier.

Again, the two-by-two table provides a simplified representation (see Tables 6, 7 and 8). The on-diagonal cells are the typical cases, those off-diagonal are "anomalous", as in the case of cloven hooves and cud chewing (Table 6). They may be anomalous *by definition*, by cultural fiat, as the Douglas argument implies. Or, more likely, they may be seen as anomalous by virtue of the fact that they represent empiri-

TABLE 6
Co-occurrence probabilities of cloven hooves and cud-chewing
(Reference population: species of Middle Eastern mammals.)

	+ Chew cud	− Chew cud
+ Cloven hoof	10	1
− Cloven hoof	3	90

Guttman's coefficient of predictability (symmetrical), $\lambda = 0.67$.

TABLE 7
The co-occurrence of feathers and flying

	+ Flying	− Flying
+ Feathers	Most birds	Cassowaries
− Feathers	Bats	Most land verbebrates

TABLE 8
The co-occurrence of external scales and aquatic habitat

	+ Scales	− Scales
+ Aquatic	Most fish	Cetaceans Eels Otters
− Aquatic	Lizards Snakes Pangolins	Most birds Mammals

cally infrequent trait complexes. If animals with cloven hooves were equally likely to either chew or not to chew their cud, it seems unlikely that one combination of characters would be seen as exceptional and the other normal, by the human observer. It is precisely this quality of surprise, associated with the empirically determined improbability of occurrence of a given combination of characters, that the familiar statistical measures of association are meant to quantify. I assert that the animal anomalies are not independent creations of a cultural system imposed upon natural chaos, but rather reflect creative human reactions to the perception of empirical correlations in the natural environment.[9] We might even employ a measure such as Guttman's coefficient of predictability to estimate the empirically determined factor (Freeman, 1965, pp. 71–8), as is done in Table 6.

It is no accident that animals which chew their cud also have hooves—both characteristics favour adaptation to open grassland habitats, which in turn is associated frequently with herding behaviour. Bats and cassowaries are empirically unexpected (Table 7); feathers and flight evolved together as parts of an ancient adaptive system. Thus flightless birds and flying mammals are widely noted among ritually singular animals. Likewise pangolins, snakes, eels, otters and cetaceans are particularly likely to receive special ritual note (cf. Douglas, 1957; Bulmer, 1967; Tambiah, 1969; Anderson, 1969) as exceptions to the dominant, aquatic vertebrate pattern exemplified by the vast majority of fish (Table 8). The selection of these types of animals for special ritual service supports Douglas's emphasis on anomaly as a key to understanding symbol systems. Their widespread and repeated selection in independent cultural systems suggests that symbol systems do not exist in an empirical vacuum. Rather symbol systems must be understood as creative syntheses of material and mental regularities. The logical anomalies are at the same time empirical rarities, and idealist and materialist explanations flank the truth.

Notes

1. An earlier version of this paper was presented at the symposium "Cognitive Systems in their Material and Behavioral Contexts: Examples from Ethnobiology", at the 75th Annual Meeting of the American Anthropological Association, Washington D.C., November 20, 1976. I would like to thank my colleagues at the Language–Behavior Research Laboratory, University of California, Berkeley, and at the Department of Anthropology, University of Washington, Seattle, for the questions they raised at earlier informal presentations of the present arguments, and Roy Ellen and Ralph Bulmer for helpful criticisms at a later stage.

2. I suspect the lack of synthesis may be primarily due to the fact that ethnoscientifically oriented scholars have tended to emphasize the "technical" as opposed to the "expressive" aspects of human behaviour (cf. Leach, 1972, pp. 9ff.), while since Durkheim, structuralists have focussed almost exclusively on expressive culture.
3. I follow Driver (1903) here. See Table 1 for a comparison of his list with that of the Revised Standard and King James versions.
4. I cite the scientific classification scheme as an independent operational definition of the singularity of animal categories. It might be argued that the scientific classification scheme is not historically independent of the biblical scheme. This argument is not persuasive in light of the intense critical attention paid to scientific biological classification since Linnaeus's time.
5. This may be demonstrated by counting the number of times the Revised Standard and King James version are in agreement as to the translation of the Hebrew animal terms. They agree on 12 of the 20 birds (60%) and 16 of 26 of the remainder (62%).
6. In her recent book of essays, *Implicit Meanings*, Douglas comments on the Mishnaic contention that the inedible birds are predators. She suggests that the bird list can thus be explained as reflecting the Hebrew injunction that "the eating of blood defiles" (Douglas, 1975, p. 270). This explanation is still short of the mark in that fish eaters such as the osprey, fisher owl, stork, heron and cormorant, as well as the hoopoe and the bat, are not implicated by the injunction against eating blood.
7. I do not find this rationale particularly compelling because the alleged adaptive edge to be gained by specializing in herbivores is so slight. Given the approximate 90% energy loss between herbivores and first-order carnivores, we should expect carnivores to constitute no more than 10% of the faunal biomass. Thus the energetic advantage of specializing in the remaining 90% seems hardly worth the ideological effort of a prohibition. However, *prescribing* grass-eating, herding herbivores such as the ruminant artiodactyls and the locust tribe might very well pay off energetically.
8. The hoopoe is also notably catholic in its tastes and will eat small animals such as frogs and lizards. It might thus be classed with the first 18 as a flesh eater.
9. Roy Ellen brings a similar point home in his analysis of "The Marsupial in Nuaulu Ritual Behaviour". "To make a symbol meaningful . . . it has to possess certain intrinsic emblematic qualities. This is what makes the cuscus [the marsupial in question] a good symbol". (Ellen, 1972, p. 234.)

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