Aspects of Kalam classification of birds.
This paper examines the relationship between the every-day general purpose classification of birds by the Kalam of the New Guinea Highlands and their attribution of ritual or mystical significance to certain categories of birds. It suggests that the material and mystical attributes of birds are closely integrated in Kalam thinking, so that in a sense mystical significance is built into, or partially expressed by, the general classification. However, one can also identify birds of mystical significance as either the most salient (frequently, the largest) species in the Kalam classificatory groups in which they occur (the "type species", as it were, of their "genera" or other groups), or as being singular in some aspect of their behaviour relevant to man, and in this respect distinguishable either from all other birds, or from all other birds in the lower order categories to which they belong.

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In a previous paper (Bulmer n.d.(1)) I argued that while it is very true that animals are good to think, which particular animals are thought about, as totems or in other ways as ritually significant, is not unrelated to which of them are good to eat. Thus I attempted to demonstrate, in the case of the Kalam of the New Guinea Highlands, that those creatures which are salient in the every-day, general purpose classification of the people (a classification which is demonstrably relatible, in part, to economic evaluations) are also, by and large, the ones that are marked for totemic and other forms of ritual recognition. An important point to note in this argument is that it is not necessarily the animal kinds whose members have, individually, the highest economic value, which are picked on - though in some instances this is the

* Revised version of a paper delivered to Department of Anthropology, University of Sydney, 10 July 1975.
case; even less is it the animal kinds which contribute most, in gross, to the economy, which are marked. What does appear to be the case, at least for the Kalam, is that it is the animals which are either the most salient representatives of classes that are collectively of some positive or negative material significance, or which are the most unusual members of those classes, which are ritually marked. Put another way, what Douglas (1966) and Tambiah (1969) have taught us to regard as 'anomalous animals' certainly show some tendency to be ritually marked; but so also do the animals which are the most salient and notable "typical" representatives of their groups, creatures which bear in some respects analogous positions to the "type species" of Linnaean genera.

In this argument I was building on Radcliffe-Brown, who, in my view, was, with certain qualifications, right when he stated, in that well-known and much-criticised passage, that, "any object or event which has important effects upon the well-being (material or spiritual *) of a society, or anything which stands for or represents any such object or event, tends to be an object of the ritual attitude" (Radcliffe-Brown 1952:121).

I was also in this previous paper questioning an assertion by Peter Worsley (1967:153-6), based on his presentation of material from the Aborigines of Groote Eylandt, that there is no connection between every-day classification of animals and plants, and their totemic classification.

A further point I made in the same paper, which also derives ultimately from Radcliffe-Brown, is that if one is trying to understand the ascription of particular animals to a particular ritually significant series (e.g. 'clan totems', narrowly defined), then one needs to review all ritually significant

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* "Spiritual" is the slippery term in this proposition. If "spiritual well-being" is "role", then affecting this is of course precisely what ritual symbols do; but if the impact of ritual use and reference is included, the statement becomes tautologous. Possibly what Radcliffe-Brown had in mind were such phenomena as natural landmarks, or flora and fauna characteristic of a people's territory, recognition which affects their morale. However, in such cases, might one not argue that these phenomena stood for the territory, or its divisions, and thus for something that is of material significance?
series in the culture concerned, and the extent to which these appear to be mutually exclusive. Such an examination should yield additional understanding of the principles of selection for each separate, or overlapping, list.

The purpose of my present paper is to consider two criticisms which have been made of this previous paper. I shall take one of them quite briefly, the other at some length.

The first, raised initially by Lester H. Watt, concerns the degree of circularity in my exposition of the relationship between ritual marking and taxonomic status. Might one not as well suggest that ritually marked creatures assume taxonomic salience, as that taxonomically salient creatures tend to be ritually marked? The second, raised most cogently by Dr Peter Dwyer of the Department of Zoology, University of Queensland, questions the objectivity of my judgements of 'taxonomic salience'.

The short answer to the first criticism is that in so far as every-day, or general purpose, classifications, and ritual classifications, can be distinguished from each other, a two-way relationship between them must be expected; and, depending on how important animals are in every-day contexts, the contribution of the categories of every-day experience will vary. Thus one might expect that in hunting and gathering societies the contribution of every-day knowledge and classification of animals and plants will normally be very great; whereas in societies which have changed over time so that direct interaction with wild nature is not a significant part of every-day experience, ritual and symbolic associations of animals may both bear little relation to the natural behaviour of the creatures concerned, and may also grossly distort general every-day classifications of them. Evans-Pritchard's comments on the continuing importance of big game animals in African folklore

* I am very grateful to both these critics, for prodding me into trying to clarify further my arguments.
long after they have become locally extinct, may be recalled; as also Fortes's on the symbolic significance of animals no longer ever seen by Tallensi. There is a pretty thin line between these creatures and Leach's Kachin baren, or for that matter, dragons, Chinese, Welsh, St George's or otherwise.

This is a topic which merits a whole paper, but one which I have not prepared for today; but we may note that in his 1929 discussion of totemism, Radcliffe-Brown was restricting himself to the Australian Aborigines and to other hunting and gathering societies. He was arguing the positive case that animal and plant species of significance in the life of hunting and gathering peoples tend to be the object of the ritual attitude, not, I think, trying to explain why certain animals which are of no every-day significance to the life of peoples with different types of economy may remain as ritually significant to them.

Thus I shall from now on restrict myself to a consideration of the second criticism, that concerned with the problem of objectively defining taxonomic saliency. I shall consider only birds: I have little to add to the information on other animals of ritual importance which is included in my previous paper.

The list of birds which I now present is based on a re-examination and amplification of my fairly complex and extensive data on this topic undertaken by one of my long term Kalam assistants, Ian Saem Majnop, and myself, when Saem visited New Zealand for three months in 1974-75. At that time we drafted a book called "Birds of my Kalam Country", the main text of which is provided by Saem, who also decided what birds should go together in each chapter, and what order the chapters should go in.

**TABLE A: Birds of ritual or mystical importance**

1. "Super-totems", i.e. taxa subject to avoidance (of killing, eating, naming) at certain times by all Kalam, in relation to most important horticultural activities:
   - Cassowary; harpy-eagle.

2. "Totems", i.e. taxa which many Kalam must respect at all times (not kill or eat) on account of hereditary associations:
   - Sooty owl; flying fox.
3. Significant in dream experience:
   (a) as men's souls: five species of lories, of which one, the Papuan Lory, is also subject to nest avoidance; typical goshawks (two species)
   (b) as women's souls: three species of long-tailed birds of paradise, especially Greater Sicklebill.
   (c) as indication of success in self-decoration: boat-billed flycatcher.

4. Messenger-manifestations of ghosts:
   Willie-wagtail; pied chat; mouse-warbler - of which first two are never eaten (partly because they are unclean birds) and should also not be killed.

5. Omens:
   (a) of death: King Parrot, and possibly also some other rare parrots. (Also, in some contexts, totems (2. above) and Papuan Lory (3(a) above)).
   (b) of ill-success in hunting: King Parrot; owlet-nightjar; black-mantled cuckoo-shrike; black fantail (sometimes); friendly fantail (sometimes).

6. Manifestations of witchcraft:
   Magpie-lark/river-flycatcher; slatey robin-whistler; wild duck; cuckoo-dove (sometimes); black fantail (sometimes).

7. Invoked in magic:
   (a) male beauty magic: five species of lories; Zoe Fruit Pigeon; Racquet-tailed Kingfisher; friendly fantail.
   (b) war-magic: goshawk; pitchui.
   (c) marriage magic: woodswallow.

8. Other mystical significance:
   (a) association with taro: Mountain Pigeon.
   (b) association with seasons: Rainbow Bird.
   (c) hunted and cooked in initiation ritual: Boobook Owl.
   (d) associated with ghosts or witches: 'spirit-whistler' (migrating waders).

In attempting to explain why it is that the species listed in Table A are ritually or mystically significant, and especially the thirty or so species listed under headings 1-6 and 8, I shall first outline the formal taxonomy which Kalam apply to birds; then discuss the extent to which what I call "the principle of natural taxonomy" is recognized by Kalam; then put
forward what I presently see as the main dimensions in terms of which groups of
birds are distinguished and evaluated, and individual species or species-like
taxa are evaluated, by Kalam.

The Kalam with whom I have worked apply some 180 terminal taxa (smallest
standardly named categories) to the different kinds of flying birds and bats
which they place in the primary taxon (largest named category) yakt. Cassowaries,
which are very large flightless birds, are not normally regarded as yakt; but
they are certainly associated with birds, and in some contexts, e.g., name taboo,
the cassowary can be referred to as 'the large bird' - which is why, after some
debate, Saem included a chapter on the cassowary in our book.

The formal taxonomy is shallow. The majority of terminal taxa are immediate
subdivisions of 'yakt' - e.g., the white cockatoo is just wtag or yakt wtag; but
in about 30% of cases the immediate named subdivisions of ykat have themselves
two or more named divisions; and just one or two of these subdivisions are
further subdivided, so that in these very restricted areas the formal taxonomy
has four levels.

All but a very few kinds of birds are eaten by Kalam at least occasionally,
and many kinds are highly esteemed as foods. Some 40 kinds have plumage that
is valued for personal adornment, and a few have other parts with ornamental
or technological uses. A sizeable minority of Kalam men and boys are enthusiastic
and very competent bird hunters, and these tend to be very knowledgeable about
birds; but any Kalam would have a knowledge which would at least equal and
probably exceed that of the average Western European or white Australian country-
dweller.

I have asserted in earlier publications that, as far as vertebrate animals
are concerned, Kalam have a very good appreciation of natural species, in that,
in the overwhelming majority of cases where they are dealing with creatures
with which they are reasonably familiar, they recognise the distinctiveness of
what modern scientific zoologists identify as 'species'. This is quite simply
because, in any restricted geographical area, the majority of vertebrate species
are readily distinguishable from each other by a large number of characters of appearance and behaviour, so that if one is hunting them or in other ways consciously interacting with them with any intensity, the recognition of species differences is virtually inevitable.

It is important for my present argument to make the further point that Kalam are well aware of certain groupings higher than the species, in which a number of species (which are in fact in most cases related in zoological 'genera' or 'families') share a complex of morphological and behavioural characters. Notable examples where Kalam appreciate the association of four or more related species are: hawks and falcons; parrots; and within the parrots, lories, or lorikeets, i.e. nectar-feeding smaller parrots; pigeons; 'typical' nectar-feeding long-beaked honey-eaters; and medium sized birds of paradise and bower birds. Now I must make the point that they do not have standard names for these 'natural' groups - they are what Berlin (Berlin, Breedlove & Raven, 1968) calls 'covert categories' - but their reality in Kalam thinking is unquestionable.'Saem's chapter contents (see Appendix) illustrate this. On the other hand, where a 'natural' group of only two or three species exists in Kalam territory, and there are many of these too, both within and outside the covert categories I have mentioned (e.g. cuckoos, cuckoo-shrikes, quails, and kingfishers, which are not in the larger covert groups; and goshawks, cuckoo-doves and medium-sized birds of paradise of the Lophorina group, which are within them) Kalam do tend to have names for these - and the named groups thus constituted largely account for these areas of the formal taxonomy which have three or four levels.

These 'natural' taxonomic groups and covert categories above the level of the species are important to my argument, as, when Kalam are discussing and defining such groups, their predominant tendency is to do so by taking the largest typical species as the reference point for comparison. Where they do not take the largest as the reference point, this is almost always when either the largest is very much less familiar than some other kind, or is in certain
respects other than size atypical of its group; or where both these conditions apply.

For example, among pigeons the largest is the Zoe Fruit Pigeon (Ducula zoae), and they do sometimes name this species first and use it as their reference, but it is locally rare, and usually they take the abundant largest common pigeon, the Mountain Pigeon (Gymnophaps albertsi), as their reference. Among the honey-eaters, the largest typical common ones are the sibling species Reichenow's Melidectes (Melidectes rufocissalis) and Belford's Melidectes (M. belfordi), and they name these first. There is a larger species, the New Guinea Friar Bird (Philemon novaeguineae), which is also quite familiar to them, but in a number of respects; in appearance and behaviour, it is atypical of the group.

The same pattern appears when Kalam discuss other groups of fauna, mammals, reptiles, frogs, grasshoppers. Thus I feel confident in asserting the following proposition: 'In Kalam animal classification, within any formally recognised taxon or covert category, size, other things being equal, implies salience'.

Granted that birds are grouped in the Chapters of Saem's book in terms of several other principles which I shall proceed in a moment to discuss, as well as in terms of natural taxonomy, that is, the grouping of phenomena in terms of degrees of general similarity based on multiple criteria, it is still instructive to note that of the 14 chapters in which the species discussed do vary significantly in size, 8 start with accounts of the largest included; 3 more with the largest member of the main sub-group of birds discussed; and in only 3 chapters is a bird which is not the largest in either of these senses taken first.

How might one interpret the rating Kalam give to size? Obviously large birds have more meat and feathers on them than small ones. Further, assuming that all classification is anthropocentric, one may perhaps note that larger birds also approximate more closely to the size of man than small ones do; and perhaps more significantly still, in human society parents are larger than children, elder siblings are larger than younger, and men are larger than women.
As in many other Melanesian societies, both mature adult males in the prime of their lives, and also leaders in the community, regardless of their physical size, are referred to as \( b \ yd' \), literally, "Big Men".

However natural taxonomy and relative size are not the only principles which underly Kalam discrimination and evaluation of birds, and other creatures. There are several others, six of which I shall discuss briefly. These are:

1. Forest birds are to be distinguished from, and more highly evaluated than, birds of the open country.

2. Arboreal birds are to be distinguished from, and more highly evaluated than, terrestrial birds.

3. Birds which eat clean food are to be distinguished from, and more highly evaluated than, birds that eat dirty food. (These first three principles are related to each other).

4. Birds are to be distinguished in terms of their spontaneous interaction with man, i.e. those that either consistently or inconsistently spontaneously approach man, are accorded special significance.

5. Brightly plumed birds are to be distinguished from dull-plumaged birds.

6. Nocturnal birds are to be distinguished from diurnal birds.

I will elaborate a little on each of these six points.

1. The forest - cultivation, or forest - human settlement, opposition is a very important one in Kalam thinking and stated explicitly in myth and ritual. It is linked to oppositions between wild - domestic, hunting - gardening, clean - dirty, and male - female. By definition, almost all hunting, a male activity, takes place in the forest.

Kalam distinguish forest birds, \( ytk \ yakt \), from open country birds, \( mae \ yakt \); but by no means all species fall neatly into these divisions. However the majority do, reasonably well, and all the species which are quantitatively important in hunting (certain honeyeaters and pigeons), and most which are
individually significant (e.g. hawks), are 'forest birds'. On the other hand, the 'natural groups' of birds that Kalam recognise are, in some cases, bisected by this division. Thus some hawks are forest birds, some are open country birds; the same applies to a lesser extent to the pigeons, and, to a greater extent, to the typical honeyeaters; rails, woodcock and snipe, which Kalam regard as a covert natural category, are spread over forest and open country, as are also the different 'species' of the two names 'generic' taxa which constitute this group (rails: woodcock and snipe); and many small named generic taxa such as those applied to kingfisher, brush-cuckoos, and swiftlets and swallows, have members which span both ecological zones. However the important natural groups of parrots (and lories), long-tailed birds of paradise, and medium sized birds of paradise and bower-birds, are exclusively forest categories.

One might if one wishes generalise this forest-open country opposition into a 'principle of ecological association', noting that Kalam also isolate, for example, 'beech forest birds' within 'forest birds', and 'waterside birds' and 'grassland birds' from within 'birds of the open country'.

(2) Arboreal birds are distinguished from terrestrial birds, and arboreal birds themselves are graded according to whether they dwell in the tops of the trees or middle or lower foliage. There are two apparent reasons for this: hunting techniques applied in their capture; and cleanliness of feeding habits, which I discuss in a moment. Men, and not women or little boys, climb trees - and they do so with great skill. Climbing to the birds that nest highest up, or to hides from which to shoot birds which feed on the blossom or fruit in the highest branches, is both prestigious and economically productive.

(3) Birds which eat clean food are more valuable than those that eat dirty food. It is implicit in the Kalam world-view that man (or perhaps, woman) is the most polluting element in the environment, and human excrement, decomposing human flesh, and, in some contexts, human blood, are the most polluting substances. Some birds are alleged actually to eat excrement and
decomposing human corpses: these are regarded as totally inedible; but so are birds, other than domestic fowls, that eat worms, maggots and insects around human settlements. In general, carrion eaters and feeders on worms, terrestrial insects and rats are unclean, though progressively less so to the extent that their habitats are removed from human settlement. Those that feed on insects that are arboreal and aerial are not considered unclean, though they do not rate as highly for human food as those that feed on fruit and blossom; and those that rate highest as food are those that feed on fruit and blossom from high up in the forest trees. The carnivorous birds, the hawks, falcons and owls, are finely subdivided into those that feed basically on arboreal mammals, and which are thus themselves 100% clean: those they prey on other birds - i.e. the goshawks; those that eat substantial proportions of insects, lizards and terrestrial mammals which live distant from human settlements; and those that eat carrion and the dirty rats, insects and other small creatures living near human settlements.

(4) The spontaneous interaction of certain kinds of birds with man is a topic I discuss elsewhere (Bulmer n.d. (ii)). The ways in which birds, and some other creatures spontaneously interact with man, or are interpreted as doing this, is a consideration which is, I think, neglected by Levi-Strauss in his extended answer to Radcliffe-Brown’s question, "Why all these birds?" (Levi-Strauss 1963, Ch.4) Essentially, my argument is that birds of mystical importance are likely to include representatives of two broad groups: those that normally maintain a considerable distance from man (many may be relatively rare), and that are selected for complex reasons, but which, when encountered unexpectedly, are likely to be interpreted in highly mystical ways; and those that regularly and spontaneously interact with men, and whose mystical

* Saem’s original proposal was to place these groups in three or four different chapters of "Birds of my Kalam Country", see below (p. 15 ).
significance derives mainly from the nature of this interaction. These in turn divide up into those that are common, relatively fearless of men, and with calls or songs which readily lend themselves to anthroposonic or anthropovocoid interpretation; and those that are either fairly rare, or at least cautious in their approach, and which men see as interacting with them in an unpredictable and mysterious way. In the Kalam case two of the commonest unclean-feeding birds around human settlements approach man relatively fearlessly - the willie wagtail and the pied chat - and they call at men in the gardens and near the homesteads. In the forest the mouse-warbler does this. These are manifestations of ghosts, and in the case of the pied chat and the mouse-warbler, which chatter in a human-like way, they bring messages. On the other hand, the birds that habitually, but nevertheless unpredictably and mysteriously approach, and often startle, men, and then disappear in an elusive way, are witches.

(5) I have said that plumes of some forty kinds of birds are used by Kalam in self adornment. Evaluations are based in part on colour and colour-pattern, in part on size, in part on durability, in part on other aesthetic qualities which one could write a whole paper about. Value in external trade is also a factor, and does not correlate closely with evaluation for local use. Availability is also important. Kalam like their dance teams to dress with some measure of uniformity, and to that extent certain plumes which are scarce, but not too scarce, are in great demand, notably those of the Yellow, or Lesser Bird of Paradise (Paradisaea minor). Interestingly, the Yellow Bird of Paradise does not appear to have any significant mystical value for Kalam. Part of the reason may be that it is not a local bird; but part may also be that in the regions where it is present, between half a day's and two day's walk from the Upper Kaironk settlements, it tends to be a very common and conspicuous bird, both in the settlement areas and in the forest. The same is also true of the White Cockatoo (Cacatua galerita), which is quantitatively very important in Kalam headdress ornaments, but which appears to have no mystical significance,
and of the one species of bird of paradise which is locally present and fairly common in the Upper Kaironk forests, and widely used in dance regalia, the Saxony (Pteridophora alberti). In other cases in which birds are both very important in ceremonial regalia and mystically, it is hard to estimate quite what the relationship is between these two factors. For example, eagle (Harpypopsis) plumes are the most valued of all - is this because the eagle is the most notable of birds? Or is the eagle the most notable of birds in part because of the size and splendour of its barred brown and white tail and wing plumes, and its white breast feathers? And is the Papuan Lory (Charmosyna papou) given high mystical status because of its brilliant multicoloured plumage, including the green and red which, according to Saem, are the best colours for male ornaments?; or is it also because it lives in the tops of trees in the high mountain forest, feeds on the cleanest of all foods, is notably shy and mysterious in its habits, and is one of the greatest challenges to the skill of the hunter?

(6) Little needs to be said about the diurnal - nocturnal categorisation. Most wild mammals are nocturnal, and in this are opposed to man and domestic animals (with partial exception of the dog). Most birds are diurnal, but a minority is nocturnal, and it is perhaps not surprising that several of these species are accorded mystical significance.

There are of course other ways in which Kalam classify birds - for example into local vs non-local or exotic; but granted that the six dimensions I have listed are not 'refined' - for several of them are partially reducable to others in the list - I would still argue that they provide a set of grids which enable us to isolate both salient groups and salient species other than simply in terms of natural taxonomy.

Let me now illustrate how these principles are invoked, by just one particular Kalam, Ian Saem Majnep, in what is admittedly hardly a traditional
Kalam cultural activity, namely the ordering of chapters for an ornithological monograph (see Appendix). While it is highly improbable that any other Kalam would order his list of birds in precisely the same way that Saem does, and while his working with myself and other expatriate anthropologists and naturalists (intermittently for ten years) unquestionably affects his approach to his task, I do not think that there is any significant general feature of his classification which is out-of-line with the thinking of the generality of members of his society. It will of course be interesting to see the reaction of other Kalam to his book, when it appears.

The two obvious general principles which underly the order of Saem's chapters, are the placing of groups of birds of high collective economic and mystical importance at the beginning and end of the work; and his ordering of habitat groups from, very much, the point of view of the hunter.

Turning to the principles I have discussed:

1. We may note first that Saem keeps the widely recognised covert categories together as groups, for example lories in Ch. 1, typical honeyeaters in Ch. 3, pigeons in Ch. 5, diurnal raptors in Ch. 17.

2. Regarding the forest - open country dimension, we may note that Chapters 1-7 and 18 deal basically with forest birds; 8-11 and 14 with birds of the open country; 15 and 16 with exotic birds; and 12, 13 and 17 with groups established on criteria that over-ride geography and spatial ecology, i.e. natural taxonomy and also, in the case of 13, nocturnal habit.

In so far as chapters 1 to 7, notably 3 and 7, include a few species which are predominantly non-forest birds, this also is accounted for by Saem's following natural taxonomy and including open-country birds that are morphologically and behaviourally similar to the forest species which constitute the majority in the natural groups. Similarly chapters 8 and 10 include certain species which are essentially forest birds, and others that straddle forest and open country so that one cannot say
that either is the more characteristic habitat; and the inclusion of these can again be accounted for by natural taxonomy.

3. Within the seven chapters mainly devoted to forest birds, 1, 2, 3 and 5 are in large measure devoted to natural taxonomic groups, though in 1, 2 and 5 arboreality and feeding habits are also stressed. 3, 4 and 6 are sub-groups of forest birds which are essentially more narrowly defined by arboreality and feeding patterns, in ways which make a great deal of sense from the point of view of the bird-hunter.

4. The five chapters devoted to birds of the open country divide them up in terms of ecological and behavioural associations: waterside birds (Ch. 11), aerial birds (Chs. 9, 10, 14) subdivided according to whether they perch and/or nest in trees or not, and a residue of grassland, garden and arboreal birds (Ch. 6), after many species that could also have been included here have for other reasons been placed in earlier chapters.

5. Of the exotic birds, (Chs. 15 and 16), the Yellow and Red Birds of Paradise are treated separately for their unique plumage and high economic value. Saem notes however in his text that in their behaviour they are similar to the long-tailed birds of paradise of the forest.

6. Chapter 17, on the diurnal raptors, is, in the present context, of interest in two different ways. Firstly, Saem said that he had great difficulty in deciding where to place this chapter. These birds are very important, so they had to come either at the beginning or at the end of the book. He eventually opted for the end. Secondly, he was tempted to break this one long chapter down into several shorter ones, each dealing with a group of hawks distinguished by their characteristic prey and life-style: eagle and buzzard in one chapter, the goshawks in another, and the kites, harrier and brown hawk into one or two more. He wavered over this: and I have to confess that it was the one occasion when I consciously influenced him in his decision, indicating that in my view it seemed more appropriate to leave them together. His
inclination to 'split' both reflects the high interest he has in this group, and the importance Kalam in general attach to a bird's feeding habits.

I should add that in many places in his text Saem points to relationships between species he discusses in one chapter and others that he discusses elsewhere, and in some cases notes that he has necessarily been arbitrary in placing them where he does.

Thus, making the crudest of counts, one may say that 'natural taxonomy' is invoked in almost every chapter, but could be seen as a major organising principle in at least 6 of them; the forest-open country dimension is significant in the definition of 13 chapters; the vertical-horizontal dimension (aerial; high arboreal; middle arboreal, terrestrial) is relevant to the definition in at least 6 chapters; feeding habits could be seen as a defining principle for 9 chapters; plumage value for 3 or 4; and nocturnality 2.

To return now, in conclusion, to my central topic, the determination of 'salience' in the general-purpose and essentially non-mystical classifications of birds by Kalam. I suggest that salience attaches both to groups of species, and to individual species within groups. I would regard as salient those 'natural' groups valued on account of size or plumage or both (hawks, long-tailed birds of paradise, pigeons, parrots and lories); and the largest typical representatives of these groups as particularly salient (Eagle, Greater Sickle-bill, Zoe Fruit-Pigeon or Mountain Pigeon, Papuan Lory).

I would also suggest that we may regard as salient any bird which is the largest typical species of any sizeable 'non-natural' group based on a combination of the criteria of habitat (both spatial and vertical dimensions considered) and feeding habits: e.g. arboreal frugivores, arboreal insectivores, terrestrial insectivores, aerial insectivores, nocturnal insectivores, nocturnal carnivores. Such a list would again include the Zoe Fruit Pigeon or Mountain Pigeon, but also Black-hooded Cuckoo-Shrike, Chestnut Rail, Woodswallow, Boobook Owl, and Sooty Owl.
Turning back to Table A, most of the species listed under 1, 2, 3, 5, 7 and 8, are thus accounted for, and only one species, Chestnut Rail, has so far been named which appears to have no mystical associations. A little special pleading which I am prepared to provide if requested, will plausibly account for nearly all the remainder, in 1, 2, 3, 5, 7 and 8.

However the birds in 4 and 6, ghost-messengers and witch-birds, cannot be accounted for thus. Here the additional consideration of spontaneous interaction with man has to be invoked: the most important of these species are the ones that either consistently and relatively fearlessly interact with man (ghost-messengers) or mysteriously and unexpectedly do so (witch-birds).

I have not made much use in this paper of the Douglas-Tambiah propositions about taxonomic anomaly. One can perhaps construct a plausible argument that cassowary, flying fox and possibly also the wild duck (a witchbird) are taxonomically anomalous to Kalam, though I am not sure how far a category as important in its own right as cassowary is, can be considered to be anomalous. I don't myself see anomaly as being a highly significant factor in accounting for birds of mystical significance to Kalam, except in so far as the unusual behaviour directed towards man by certain species is regarded as anomalous. Which leads me to ponder if the most crucial characteristic of the anomalous pangolin might not be its singular response to the hunter, that of rolling up, hedgehog-like, in a ball.

Although I'm still by no means satisfied with my formulation of the argument, I hope I have at least conveyed some of my reasons for remaining convinced that birds, and other animals, are not randomly selected as totems and for other forms of ritual or mystical marking.

A partly analogous case might be the problem of the investigator who set himself the task of deciding how appointments to University teaching positions had been, and were being made, reviewing on the one hand the successful applicants and their qualities and qualifications, and on the other hand the files of applicants from which they had been selected. How far had academic
qualifications such as degrees been considered? How far previous teaching experience? or being well known personally to the appointments committee? or having selected the right referees? or being of certain nationalities, races or sexes? How far had contingencies of timing affected decisions?

A review of this kind might leave one very puzzled as to the precise principles of selection and their ordering, the weighting of the different factors - and yet one would probably still have to admit that selection appeared not to have been entirely random.

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Postscript

If and when I write 'Totemism and Taxonomy: Part III' I would expect my main task to be to try systematically to relate, and reconcile, the insights of Leach (that the concrete relationship and interaction between man and animals species is likely to be of considerable importance); of Douglas, with elaboration from Tambiah (that, under certain conditions, taxonomic anomaly leads to special ritual status); and of Radcliffe-Brown, with considerable elaboration from Levi-Strauss (that sets of species of ritual or mythological significance are likely to be seen as related to each other in ways homologous to those existing between human groups or individuals).

One hypothesis, which I would like to explore by reference to comparative case materials is that, by and large, the straight-forwardly taxonomically amiable creatures are appropriate for the representation of sectional or divisional ritual interests; whereas the anomalous creature, if given any ritual significance, will be of importance to society as a whole.
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TAMBIAH, S.J.

WORSLEY, P.M.
Chapter 1. "Birds which men's souls can turn into (i.e. that represent men, in dream experience)". *(Lories and other local parrots; nuthatches).*

(i) *Dusky Lory, Pseudeos fuscata*

(ii) *Rainbow Lory, Trichoglossus haematodus*

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*gasln* Yellow-billed Mountain Lory, Neopsittacus muschenbroekii

* kamayas Orange-billed Mountain Lory, Neopsittacus pullicauda

* wdn-ng Tearful Lory, Oreopsittacus arfaki

* jboq Little Red Lory, Charmosyna pulchella

* byay Striated Lory, Psittueteles goldiei

Notes: (i) Kalam synonyms are excluded from this list.

(ii) Taxa marked with asterisks are of ritual or mystical significance.

(iii) Taxa marked with daggers are defined by Saem in ways which do not correspond to general usage of other Upper Kaironk Valley men consulted.

(iv) Kalam names in brackets are mentioned by Saem as applied by some other men to species which he describes, though he either disagrees with, or will not vouch for, their application.

(v) Zoological species names in brackets refer to species not explicitly described by Saem, but which have been identified by the Editor and assigned by other Kalam men to taxa Saem names.

(vi) Where Saem explicitly recognises more than one division of a terminal taxon, but does not name them, these are numbered (i), (ii), etc.

(vii) Where glosses referring to age, sex or polymorphism are unbracketed, these follow distinctions Saem explicitly makes; where they are bracketed, these indicate the Editor's, and not Saem's, assessment of biological correspondence.

(viii) Latin names follow Rand & Gilliard (1967), except in the case of certain Whistlers (PACHYCEPHALINAE), Honey-eaters (MELIPHAGIDAE) and Berry-peckers (DICAIDAE), where revisions in Diamond (1972) are followed.

(ix) English names follow in the main Rand & Gilliard (1967), though in a few cases alternatives provided by Diamond (1972) or innovations by the present Editor are used.
Yellow-fronted Blue-eared Lory, Charmosyna placentis

Pygmy Striated Lory, Charmosyna wilhelminae

(i) Brehm's Tiger Parrot, Psitacella brehmi

(ii) Madaras's Tiger Parrot, Psitacella madaraszi

Papuan King Parrot, Alisterus chloropterus

(i) Papuan Sitella, Nesitt a ? chrysop tera

(ii) Pink-faced Mynthatch, Den boenositta miranda

(iii) Pygmy Parrot, Micropsitta ? bruilini

Chapter 2. "Birds in which women show themselves (i.e. that represent women, in dream experience)". (Long-tailed Birds of Paradise).

Greater Sickle-bill, Epimachus fastosus - nature males

Lesser Sickle-bill, Epimachus meyeri - nature males

Greater & Lesser Sickle-bills, E. fastosus & E. meyeri - females & immature males

Stephanie Bird of Paradise, Astrapia stephaniae - nature males

Stephanie Bird of Paradise, A. stephaniae - females & immature males

Chapter 3. "Birds that feed at flowering trees". (Typical honey-eaters; mistletoe-bird).

Reichenow's Melidectes, Melidectes rufocri ssalis

Belford's Melidectes, Melidectes belfordi

Cinnamon-breasted Wattle-bird, Melidectes torquatus

Grey Honey-eater, Eucopy rius cinereus

Honey-eaters of the Meliphaga analog a group

Black-throated Honey-eater, Meliphaga subfrenata

Brown-backed Streaked Honey-eater, Ptiloprora guisei

Myzomela Honey-eaters (Myzomela spp.) & Mistletoe-bird, Dicaeum sp.

Adult male Red-collared Myzomela, Myzomela rosenbergi

Female & immature male Red-collared Myzomela, M. rosenbergi

Mistletoe-bird, Dicaeum geelvinkianum

(i) New Guinea Friarbird, Philemon novaeguineae

+ (ii) Meyer's Friarbird, Philemon meyeri

((iii)) (New Guinea Oriole, Oriolus szlavi)

Chapter 4. "The families of birds that feed on Pipturus fruit". (Melipotes honey-eaters, certain berry-peckers and birds of paradise, and the bower-bird).

Common Melipotes, Melipotes fumigatus

Berry-peckers, Melanocaris versteri, (M. nigra), Rhamphocaris crassirostris
Chapter 5. "The families of birds that come to places where there are stones that they can break up small and swallow". (Pigeons and doves).

* malg Mountain Pigeon, Gymnophaps albertisi
koot White-fronted Fruit-dove, Ptilinopus rivoli
koot btep-sek " " " " " " - adult males
koot amam " " " " " " - females
gadmab Ornate Fruit-dove, Ptilinopus ornatus
gadmab btep-sek " " " " " " - adult males
Great Cuckoo-dove, Reiwardtoena reiwardtsi

Cuckoo-doves, Macropygia spp.

Ambina Cuckoo-dove, Macropygia emboinensis

Black-billed Cuckoo-dove, M. nigrirostris (adults)

(most Kalam distinguish only two kinds of kavut, not differentiating kavut yb from kavut sapolkod, so that this taxon corresponds exactly with M. nigrirostris).


? White-breasted Ground-dove, Gallicolumba ? jobiensis

Chapter 6. "Birds of the inner foliage". (Insectivorous birds of the forest, other than mainly terrestrial feeders, i.e. cuckoo-shrikes, fly-catchers, typical whistlers, warblers, the Ifrit babbler and the Longbill honey-eater; plus some small frugivorous birds that feed mainly in the lower storey, i.e. the White-eye, certain berry-peckers, the Parrot-Finch and the Mottled Whistler).

Cuckoo-shrikes, Coracina spp.

Black-hooded Cuckoo-shrike, Coracina longicauda

Black-bellied Cuckoo-shrike, C. montana

Stout-billed Cuckoo-shrike, C. caeruleogrisea

Black-throated Thicket-flycatcher, Poecilodryas albonotata

White-winged Thicket-Flycatcher, Peneothello sigillatus

Typical smaller whistlers, Pachycephala schlegeli, ? P. soror, P. modesta, P. rufiventris dorsalis

Schlegel's Whistler, P. schlegeli & ? Selater's Whistler, P. soror

Brown-backed Whistler, P. modesta, & White-bellied Whistler, P. rufiventris dorsalis

Blue-capped Ifrit; Ifrita kovaldi

Fantails, Rhipidura atra & R. brachyrhyncha

Black Fantail, R. atra - males

Female ( & Rufous Fantail, R. brachyrhyncha)

Friendly Fantail, Rhipidura albolimbata

Boat-billed Flycatcher, Machaerirhynchus nigrirostris

? Black Monarch, Monarcha axillaris

Microeca Flycatchers, Microeca papuana & M. ? griseiceps

Slatey-chinned Longbill, Toxorhamphus poliopterus

Mountain White-eye, Zosterops novaeguineae

Tree-warblers, Gerygone ruficollis & G. cinerea; ? Thornbill, Acanthiza marina

(i) Red-necked Tree-warbler, Gerygone ruficollis

(ii) ? Grey Tree-warbler, G. cinerea
kaby-kas-ket  ? Grey-headed Warbler, Gerygone chloronota
penbyn  Leaf Warbler, Phylloscopus trivirgatus
jeptpt  Fidgetting Flycatcher, Euryzonus rubra
tubum-kab-ket  Tit Berry-pecker, Oreocheris arfaki
tubum-kab-ket norm  Mountain Berry-pecker, Paramythisa montium
gupi-magl-ket  Mottled Whistler, Pachycephala leucostigma
bajj  Parrot-finch, Erythura trichroa

Chapter 7. "Terrestrial birds". (Rails, woodcock & snipe, ground-dove, quails, and certain babblers, warblers and flycatchers of the forest floor and low undergrowth).

konak  Forbes's Chestnut Rail, Rallia forbesi
konak ad-ket  ? Slate-breasted Rail, Rallus bactranius
kopl  Woodcock, Scolopax saturata
kapy-töpl  ? Snipe, Gallinago spp.
blob  Beccari's Ground-dove, Gallicolumba beccari
kym  Swamp Quail, Syncerus viscipes
kabpet  King Quail, Coturnix chinensis
kowklog  False-pitta, Melampitta lugubris
* koap  Mountain Mouse-Warbler, Crateroscelis robusta
seên  Wren-Warblers, Sericornis spp. esp. Mountain Wren-warbler, S. nohuyisi; (Mountain Straight-billed Honey-eater, Timeliopsis fulvigula); Ploughshare Tit, Eulacestoma nigripectus
seên yb  Large Mountain Wren-warbler, Sericornis nohuyisi
seên ym  (i) ? Papuan Wren-warbler, S. papuensis
seên tvmd-bad-sek  (ii) ? Buff-faced Wren-warbler, S. perspicillatus
seên mslk-egy  Ploughshare Tit, Eulacestoma nigripectus - males
  "  "  "  "  "  "  - females
*psîn  Slatey Thicket-flycatcher, Peneothecela cyanus
gopkob  ? Lesser New Guinea Thrush, Amalocichla incerta
(gopkob)  High Mountain Eupetes, Eupetes leucoastictus
sweg  Rufous-naped Whistler, Pachycephala rufinucha

Chapter 8. "Birds of the open country".
twn  Pheasant-coucal, Centropus phasianinus
gac  Grass-warbler, Megalurus timoriensis
* kmmyd  Willie-Wagtail, Rhipidura leucophrys
* wimen  Pied Chat, Sasiccola caprata
lbg  Schach Shrike, Lanius schach
abaw  Brush-cuckoos, Cacomantis pyrrhophanus, C. variolosus, (C. castaneiventris)
Chapter 9. "Those birds that perch high in the lopped trees".

*saw mseen-ket
Grey-breasted Cuckoo, C. variolosus

*saw kamay-ket
Pantailed Cuckoo, C. pyrrhophanus

sloj
Black and White Fairy Wren, Malurus alboscapulatus

kaj-meg
Tailor-bird, Jisticola exilis

plolem
(i) Sacred Kingfisher, Halcyon sancta
(ii) ? Mountain Yellow-billed Kingfisher, Halcyon megargyncha

* nyolelegp
? a small flycatcher

do
Mannikin, Lonchura spectabilis

*wobob
Black-headed Pitchui, Pitchui dichrous

Chapter 10. "The kinds of birds that just fly constantly around".

*mpabgw
Mountain Peltops Flycatcher, Peltops montanus

* kaakac
Greater Woodswallow, Artamus maximus

Chapter 11. "Birds that fly above the water".

*nay
New Guinea Mountain Duck, Salvadorina wagiensis

(kon nay)
? Cormorant, Phalacrocorax sp. or spp.

qalimbly
? New Guinea Bittern, Zonerodius heliosylus

* jiggayan
Magpie-lark, Grallina brunnea; (& River Flycatcher, Monachella muelleriana, sometimes distinguished as kotty)

ngopagog
Grey Wagtail, Motacilla cinerea

*joly
Racquet-tailed Kingfisher, Tanysiptera? palatea


*sagal
Sooty Owl, Tyto tenebricosa

skayag
Grass Owl, Tyto capensis

* manjel
Boobook Owls, Ninox spp., especially Papuan Boobook, Ninox theomacha, and possibly also smaller frogmouth, Podargus ocellatus

* manjel wagn-sek
Papuan Boobook, Ninox theomacha

* manjel madg-nokom
? Lesser Papuan Frogmouth, Podargus ocellatus
Chapter 13. "Those kinds of birds that constitute the family which vomits up the food that they have eaten". (The bats).

*(i) Spinal-winged Bat, Dobsonia moluccensis
(ii) All large fruit-bats or 'flying-foxes'
(iii) All bats

Chapter 14. "When this bird comes, we say that the season of the sun has arrived."

Rainbow-bird, Merops ornatus

Chapter 15. "Birds of the warm lowlands".

Black-headed Butcher-bird, Cracticus cassicus

Hornbill, Aceros plicatus

Victoria Crown Pigeon, Goura victoria

White Cockatoo, Cacatua galerita

Wattled Brush Turkey, Aepypodius arfakianus

Brown-collared Brush Turkey, Talegalla jobiensis

Common Scrub Hen, Megapodius freycinet

Pesquet's Parrot, Psittichas fulgidus

Palm Cockatoo, Probosciger aterrimus

Bare-faced Crow, Gymnocrurus tristis

Shovel-billed Kingfisher, Clytoceyz rex

Roller, Eurystomus orientalis (alternatively, the New Guinea Oriole, Oriolus Szalayi, c.f. Ch.3, ywak)

Black-headed Butcher-bird, Cracticus cassicus

? migratory wader spp.
Chapter 16. "The Yellow and the Red Birds of Paradise are birds that are different from all others".

*yabal* Yellow, or Lesser, Bird of Paradise, *Paradisaea minor*

*pkarj* Yellow Bird of Paradise, *P. minor* - females & immature males

*aangoym sgy* " " " " " " fully mature males

*tay* Red Bird of Paradise, *Paradisaea raggiana*

Chapter 17. "The families of birds which variously take furred animals, birds, snakes, lizards and carrion". (The diurnal raptors).

*âw* Harpy-eagle, *Harpia novaeguineae*

*sksb* Long-tailed Buzzard, *Buteo longicaudatus*, and at least one other unidentified hawk.

*sksb goblad* Long-tailed Buzzard, *H. longicaudata*

*+ sksb kaw-kas-ket* unidentified hawk sp.

*god* (i) Meyer's Goshawk, *Accipiter meyerianus*

 (ii) ? Grey Goshawk, *A. novaehollandiae*  

 (iii) ? Peregrine Falcon, *Falco peregrinus*

*cop* 'Typical' goshawks, esp. *A. fasciatus* and *A. melanochlamys*

*cop kamay-ket* (i) Black-mantled Goshawk, *A. melanochlamys* (? mature plumage)

 (ii) Black-mantled Goshawk, " " (? immature plumage)

*cop men-ket* Australian Goshawk, *A. fasciatus*

*dmnyat kosbol* ? Spotted Marsh Harrier, *Circus spilonotus*

*arnt* Black Kite, *Milvus migrans*

*kolm* Red-backed Kite, *Haliastur indus*

*glegl* Prawn Hawk, *Falco berigora*

* (ngaglgl) ? Osprey, *Pandion haliaetus*

Chapter 18. "The Cassowary".

*kobt*y Cassowaries, *Casuarius bennetti*, *C. casuarius*, and *C. unappendiculatus*.

*kobt*y mosh* Dwarf Cassowary, *C. bennetti* - adult

*kobt*y ga* Dwarf Cassowary, " " - juvenile

*kobt*y mok malam* Dwarf Cassowary, " " - mature adult with bright wattles

*kobt*y gulgyn* Large lowland cassowaries, probably *C. casuarius*