CHAPTER V

ETHNOBIOLOGY: PLANTS AND ANIMALS

The complete scope of ethnobiology includes all organisms in the local lexicon, wild or not, and the human perception and behavior associated with them. This is a very large topic, so large that in this case it has been subdivided into a chapter on the generalities of plant and animal lore, with emphasis on the non-domestic part, followed by separate chapters on staple and garden crop plants. These in turn are followed by a chapter covering the techniques for managing the principal wild and domestic animals. Then the several sorts of plant-based technologies are presented: those based on wood and those based on fiber have been grouped in separate chapters, with another chapter to accommodate the remainder. There are no comparable animal-based technologies.

Ethnobotany

The relationships of the Q?eqči? to the plant world appear not to be so extensive as those of more isolated groups such as Philippine hill tribes.[1] The list of specific plant names in Q?eqči? numbers roughly 600, while the Hanuno'o reportedly have 1,600.[2]

Nevertheless, where technology of all kinds draws directly from the plant world each individual is perforce a folk botanist with 'professional' and practical concern for ever-increasing knowledge

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[1] See Conklin, 1954(a).

[2] Conklin, 1957: 44.

of useful and noxious plants. An ordinary Q?eqči? is not an ethnobotanical paragon, but he or she is no slouch either. The plant vocabulary of any one informant will usually vary more with age than any other factor, partly because an absolute loss of such knowledge is occurring but mainly because time and wide-ranging experience are required to build a plant-name vocabulary. Since even tradesmen, specialists and domestics owe first allegiance to milpa and green medicine, almost every individual continually adds to his knowledge as travel and work take him or her to the several life zones within the Q?eqči? language area.

My informants were of highland origin and no collecting trips to lowland sites were made so that the vocabulary in Appendix E includes only those lowland names and identifications which could be gleaned from published and manuscript sources. In every case these were checked for linguistic validity by both my informant and his friends and family, some of whose lowland experience exceeded his own. Still, many more names could be added by any serious effort at collection, and it is hoped that specimens and identifications for many lowland plants included in Appendix E will be collected in the near future.

Linguistic Aspects of Q?eqči? Ethnobotany

W.E. Carter lists several “types of vegetation”,[3] but these are physiognomic rather than linguistic types. There appear to be five principal divisions into which Q?eqči? plant names may be placed, and these are shown in Table 8. Fortunately there is no basic discrepancy between Q?eqči? and Indo-European concepts of plant classification – in contrast to Huichól, for example.[4]

Ambiguity arises mainly with cultivated monocots: these do not admit the contempt implicit in *pim* (weed: thick) nor do they allow the leafiness implied in *q?e:n* (leaf: herb). Also, there is no ultimate class like English *plant*, although for *animal* there is an equivalent in *šul*.

Inclusion or dual use of animal names is frequent in Q?eqči? (cf.: *ba:lam, hiš, k?aq, c?i?, woyo?*), often in terms of body parts or functions (e.g.: *r-oq c?ik*, bird’s foot; *k?ot ak?ac*, turkey excrement).[5] Some of the animals so alluded to are now extinct in all but the most remote parts of Alta Verapaz (e.g. *woyo*?); one can anticipate loss of meaning for the animal aspect of these names in the future.

There are numerous plant as well as animal kinds which are approaching extinction. The appended vocabulary is incomplete for

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[3] Carter, 1969: 32.

[4] Price, 1967: 6.

[5] See Berlin, n.d.: 15.

TABLE 8

SUPRA-GENERIC PLANT NAME CATEGORIES

1. PIM ..... weedy herbs

2. Q?E:N ..... leafy herbs

3. ČE? (TE?) . trees (also synonymous with wood from trees)

   (KOK? ČE? . saplings and woody shrubs)

   (NI:MQI ČE? forest dominant trees)

4. K?A:M ..... vine

5. OKOŠ ..... fungi (basidiomycete fruiting bodies)

highland forest trees not only because specimens for identification are awkward to get, but because of massive deforestation in the last few decades.

The commonest form for specific subdivision of generic names is by color (of flower, bark or leaf); this may be mixed with animal names in cases, or some colors may have parallel animal-derived names (e.g. *kaqi šo?ot /šo?ot kuk* – "red" or "squirrel" *Saurauia*). Few-membered classes tend to keep the generic as one specific subtype name while larger classes do not. The separation is a rough one at around 3 or 4 members, and it may pose a problem for interpretation of the evolution of plant classification in terms of "type-specific" and homogeneous "attributive" endpoints.[6]

The intermediate stage in which some term for *genuine* or *real* identifies a generic when used specifically in absent in Q?eqči?, though not a linguistic impossibility. Perhaps because *ya:l* (true, real.) and *yal* (mere, only) are so close, they would confuse native speakers as much as they do foreigners. There is an unambiguous term, *c?aqal* (sufficient, legitimate), but it is not generally used either, though it is a clear synonym for Tzeltal *bac?il*.[7]

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[6] Berlin, n.d.: 21-25; see also Raven, Berlin and Breedlove, 1971.

[7] Berlin, n.d.: 22.

Changes in Plant Communities

The most brutally obvious change in vegetation has been the clearing of forested ridges for milpa in the last thirty years or so.[8] Any informant can point out hillside tracts and ridge crests which were solid cloud forest as of four or five years ago. In the long-occupied zone around Chamelco some tree species (e.g. *wič*) represented by solitary specimens are described ruefully as abundant at one time but now without even a seedling to replace them when they die. Isolation of aldeas from each other by deep forest appears to have been the rule within memory of people now 50 to 60 years old. Some boundary lines were not formalized until about 40 years ago, to judge by one case where the *ermita* (chapel) of *Aldea* Sateša had to be removed from what was plainly a location in the southwest corner of aldea Koxila. The site is now forested a little more heavily than a ridge known to have been in pasture fifteen years ago, though some graveyard ornamentals persist. The boundaries of aldeas are now rectilinear and well marked with trees (*c?inte?*), and it seems that the Municipal government had nothing to do with the project!

The spot where lumbering methods were documented was a solid stand of pines with trunks 50 cm diameter at breast height, but the sawyers were well aware that this grove had been milpa land 50 or 60 years ago (see Chapter IX, p. 225). A pure stand such as this is

[8] For corroboration see Land, 1970: xv-xvi.

usually the product of casual but effective management in that the owner must have cut out all the competing tree species. This sort of management was observed in action across the valley from our site in Koxila, where neighbors had cleared out all but the most abundant useful type, *ca?ax.*

Perception of the earliest, herbaceous stages of succession is usually in terms of what given plants tell about the potential for good maize growth: in other words, indicator species.[9] Highland soil conditions in Alta Verapaz appear to be even simpler than those reported for the Polochíc Valley, and in general there seems to be no practical need for highly complex swidden technique like that reported in Africa and the Philippines – a difference which was also suspected by Carter.[10] Confirmation of a relatively simple bedrock pattern can be found in the Cobán geologic quadrangle prepared by Dr. Sigurd Paulson of the German Geologic Mission to the Institute Geográfico Nacionál (see Chapter III, p. 41). The principal contrast in vegetation evaluation is between hillslope lands which oblige a one-in-four rotation at the least regardless of the types of plants locally abundant, and the sinkhole and valley floors which usually will withstand perennial cultivation. However, soil quality does vary from one flat to another and the indicators of this underlying potential for good milpa are, in declining order, *šubay*, *aq*, *tis*, *š-*

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[9] Carter, 1969: 129; Carter mentions ligneous indicators only.

[10] Carter, 1969: iii.

ye kex, *š-šolol čili?*, and *tis ha?*. The last two indicate sites too wet as well as too poor for a good maize crop.

Plant Habits and Habitats

Given the many technical and medical uses of plants, some with very restricted distributions, it should be no surprise to find a well-developed Q?eqči? terminology of location. The main terms of plant geography are summarized in Table 9; these are the phrases which were used to explain to me where plants might be found for which I had collected names but no specimens. Terms in Table 8 give the gross form of the plant, and from there details would be specified which were diagnostic: branching habit, leaf size, flower color, bark texture, etc. Q?eqči? is a language poor in affective expression but far richer than English in specifications for geometric forms so that no special botanist's jargon is necessary to point out fine distinctions. In terms of color, Q?eqči? has the curious prop-erty of equating yellow with its chromatic opposite, magenta (*q?an*), as well as merging blue with bright green (*raš*) and black with dark green (*q?eq*). As for identification of life-zone distinctions, Q?eqči? has the following: *kehel čʔočʔ* (*tierra fría*: above 14-1500 m.), *qʔišnal čʔočʔ* (*tierra templada*: 5-800 m. *up* to 14-1500m.), *tiqwal čʔočʔ* (*tierra caliente*: 0 to 5-800 m.), *čaqi čʔočʔ* (*tierra seca*: drylands of the Salamá and Motagua Valleys).

Perception of Medicinal Plants

The "doctrine of signs" is present in Alta Verapaz as in Europe

TABLE 9

PLANT-LOCATIONAL TERMS IN Q?eqčiʔ

SA? Š-BE:N PEK	on exposed limestone rock
RUBEL PEK	at the foot of limestone cliffs or boulders
ČI RE OČOČ PEK	around cave mouths
RUBEL K?IČE?	on the forest floor
SA? MUL	on or in organic trash
ČI RU Š-TO:N CE? ...	on tree trunks
SA’ Š-BEN R-UQ’ ČE’	on tree branches epiphytes
ČI RU T?ANUMBIL TUL	on fallen *Musa* pseudostems (fungi)
SA? ROQ WAX	among milpa weeds
SA? PIM	among weeds and shrubs of resting milpa
SA? SA:B HA?	in swamp
SA? SIWAN	in sinkhole or doline
ČI RE NIMHA?	on riverbanks (or Č?INAHA?: little-water = creek)
BE:N RAŠ Č?OČ?	on damp ground (likewise for other soil terms)

and North America;[11] it is probably universal. However, many plants in regular use offer no clear-cut symbolization of their purpose hence part of the ethnopharmacopeia must have been accumulated empirically.

The only published treatment of Q?eqči? medical precepts is that of Dieseldorff, though some information was collected by the staff of the Instituto Indigenista Nacionál de Guatemala and included in a paper titled “Prácticas médicas tradicionales de los indígenas de Guatemala”, presented at the IV Congreso Pan-Americano de la Histó-ria de la Medicina in May of 1969. A few remarks also appear in A. Goubaud Carrera’s unpublished notes on San Juan Chamelco. It would be nearly impossible to improve on the knowledgeable presentation by Erwin Dieseldorff, though the ethnobotanical appendix (Appendix E) and the appendix on diseases and cures (Appendix G) include additional information.[12]

There is no explicit conception of a “balanced diet” among the Q?eqči? but the habit of eating nearly every known food in its season of abundance probably goes a long way toward providing a healthy diversity of nutrients. For example, ten sorts of mushroom (*okoš*) are relished and these would be likely sources of sulfur-bearing amino acids.[13]

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[11] Price, 1960: 4; Dieseldorff, 1939: 93.

[12] 0ther works in Indian medicine are reviewed in Adams & Rubel, 1967.

[13] Borgstrom, 1969: 102.

Ecological Hazards of Mixing Pasture With Milpa

Although maize-robbing hordes of field mice have been common in recent years there is no general suspicion among Q?eqči?s that increasing pasture land may promote increased rodent populations.[14] Since wealthy Indians as well as Ladinos find cattle-raising to be the most profitable land use, maize storage problems in the aldeas can be expected to increase in years to come. It is especially ironical that many men's "fortunes" have been made by farming out calves to be raised in the pastures of honest backwoods Indians, who may thereby unwittingly sabotage their subsistence for the sake of cash.

Supernatural. and Ritual Aspects of Plants

Compared to the ominous significance of several animals (see page 71, below), only a few plants bear similar interpretation. The flowers of *saqi šo?ot* are said to prophesy a fatal illness in the household where they are deposited "by the *kok? šul* (bird-flock or bat omen)" before the altar. When *k?um* squash plants produce a superabundance of fruits – over 100 per plant - these are called *š-olom kamenaq* (death's head) and presage a death in the household. No other instances of portentious plants were collected.

The ritual uses of plants are much more numerous. All types of flowers are in steady demand for decoration of church, *ermita*, and *cofradía* altars. Flowers are changed there weekly as part of the

[14] Popenoe, 1960; cited in Carter, 1969: 122.

duties of religious functionaries, or their wives. According to my informants the present-day abundance of ornamental flowers is a phenomenon of the last decade; the discovery that seed from commercial packets did well in the highest and coolest *aldeas* led to a whole new economic enterprise within a year or so, with quantities of flowers taken daily by head-load into the Cobán market for sale to both Ladinos and Indians. More restricted in use are the leaves of *r-u pek*, which serve as place-mats and dumpling-wrappers at *cofradía* feasts; č*?er šo:y*, the red leaves of which are tied over the poles that make up decorative-ritual arches (*šaqce?*) at cofradía celebrations; *tu:s*, *r-uc?u?ux kamenaq*, and *š-xolom ak?a*č*?* as graveyard and Day of the Dead ornamentals; *k?a:m* č*ax* and the branches of č*ax*, tied to house posts and decorative arches; and the needles of č*ax*, stripped off and spread over floors and paths on all festive occasions. The beans of *c?inte?* are sometimes used by diviners (*ax k?e*, the thrower) in place of the stones mentioned in Chapter III, page 42.

Practical Uses of Non-cultivated Plants

Apart from the collecting of edible plants mentioned in Chapter VII and the technical uses of plant materials listed in the several chapters on crafts, live fences are the main use made of uncultivated – though not precisely wild – plants. This kind of use of *horoq*, *ku:k?il*, and *c?inte?* is described in Chapter VII, page 167.

Ethnozoölogy

The remarkable feature of Q?eqči? knowledge of the fauna of Alta Verapaz is its breadth despite the few occasions which people have nowadays to experience many of the larger animals at first hand. Sightings of live animals, when they occur, are likely to be at a distance and very brief; hunting has not been a common Q?eqči? occupation through most of the last several generations partly for lack of game and partly for lack of guns, thanks to restrictions stemming from unsettled political conditions in Guatemala.[15] The volume of type, habit and habitat information on birds, mammals and reptiles which a few informants were able to supply must represent avid collection of oral tradition as often as acute observation of once-in-a-lifetime encounters. Insects make an exception to this pattern, but the number of innocuous and inconspicuous forms which nevertheless have names is the striking point there.

The sum of all animal names collected was nearly 220, again only half the number (450) reported for the Hanuno'o.[16] Appendix A provides listings and some identification of mammal, bird, reptile, fish, mollusc and insect names in Q?eqči?. Comments on the significance of these animals will be found throughout the text, as well as in the appendices.

The animals with Q?eqči? names include species from lowland as

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[15] Cf. Gillin, 1951: 19.

[16] Conklin, 1957: 44.

well as tropical highland habitats. Mammals like the jaguar (*hiš*) and birds like the groove-billed ani (*pixus*) do not coexist with coyotes (*šoxb*) or quetzal birds (*q?uq?*). There is no reason to suppose that Q?eqči? culture and language has not included throughout its past some parts of the whole collection of life zones in the northern Guatemalan Highlands, though the balance of population density may have shifted back and forth and travelling merchants may have preserved or adopted names for animals not found in the core area.

Linguistic Aspects of Ethnozoology

Since the intergradations among animals are rarely so gradual as among plants (with exceptions such as finch- and warbler-type birds), specific subtypes of generic names are not often needed or used. In many cases where a generic applies to plainly distinguishable forms, these forms go unlabelled presumably because they are insignificant: either one form is as useful or obnoxious as all others, or all are equally indifferent from this practical point of view.

Where specific distinctions are made, they conform to the patterns seen in plant names: 'color-coding' (*saqi uč*, white opossum; *kaqi uč*, red opossum), other surface properties (*ax k?iš uč*: the 'thorny' opossum = porcupine), size (*kok'*, small; *ni:mq(i)*, big), or combinations of animal names from distinct realms (e.g. *k?ambolay hiš*, ocelot?, from *k?ambolay*, viper, and *hiš*, jaguar). However, in no case is a plant name incorporated except as an attributive or

metaphorical reference to the animal's habits (e.g. *k?o:k?ob / šulel raštul*: animal pertaining to *Pouteria viridis*, probably the clay-colored robin).

Perception of Animal Geography and Ecology

The ranges and habits of animals are fairly easy to establish, but some purposeful effort would be needed to establish denning and nesting sites to the degree of detail that is brought up in informants' descriptions. However, many animals do not appear at all in thee Q?eqči? lexicon: birds, perhaps because Guatemala is a crossroads for bird species both migratory and not; insects, because their number boggles the mind of folk and scientific entomologist alike. One basic phenomenon of which my informants were probably ignorant was insect metamorphosis. The larval and adult forms of several insects have distinct names and are not in any way equated: for example, *ax tin šul / hay* and *ax šam šul*, the two stages of the lightning bug.

Dynamiting has reputedly left the highland rivers bereft of fish larger than minnows, but to judge by the lack of local fish names there may never have been any food fish. In the lowlands a fair number of forms are still distinguished, including two eels *(k?anti? kar*, snake-fish). The habits and habitats of several edible snail species are very widely known and put to use, while the single (?) freshwater crab species is stalked near springs by men and boys with

the time and inclination.[17] The snares and traps used on edible as well as obnoxious birds and mammals – often one and the same – are detailed in Chapter VIII.

Animals as Omens

Like many peoples the Q?eqči? have a phobic dread of snakes. The entry of even a small and harmless snake into a house is taken as a sure sign that some member of the household, usually the youngest child, will die within six months or so. Vegetation around the place where any snake is killed is said to wither away and "burn" to a radius varying with the late snake's venomous power. If the hissing 'breath' of a snake (*š-tu:l k?anti?*) strikes a person he too will wither and die. All snakes are said to be forms taken by sorcerers (*ax tu:l*), and if they cannot be killed then protection against their power may be had by tossing a bit of tobacco (*may*) at them.

Turtles, on the other hand, figure large in beliefs about the existence of lucky animals which, if recognized and captured, will provide more wealth than their captor can spend. Calves also play this part, but story and reality are not so far apart in the case of making one's fortune with a calf or two for a start. One snake is also in this good-evil magical league: *ax* *č?imb* or *cu:ltaq?a* is supposed to be a silvery-sided snake which can excrete, bit by bit, a caja of silver during each of seven years' captivity. It must be killed and buried in the center of the floor at the end of that

[17] Compare to the list of edible aquatic animals in Wisdom, 1940: 83 (fn. 31).

time, and it is said of those who have found this “fortune” that they will go within the mountains on account of that money when they die (*nak ta-kamk, sa? cu:l ta-šik š-ban a tumin ha?an*).

Birds are generally ill omens if anything. Owls and other night-calling birds are worst, the name of one of these translating as “death-in-four-days" (*wexkamk?*). Flocks of small birds or bats (generically termed *kok? šul*) in flight are among the omens linked with the affliction called *r-ilom cu:l* (see Appendix G). The lesser roadrunner (*r-ak?ač cu:l*), mentioned again below, is an omen of disaster if it crosses one’s path (*“kaq š-muh, mare to-čapeq, mare to-ceqoq tumin”*: its spirit is red [jealous], maybe we will be arrested, maybe we will lose money). A bat (*soc?*) in the house is an omen of death equal to a snake, while a fox (*yakl*) seen by day near one’s house is a less forceful omen of death or disease.

To dream of killing a gopher (*ba*) implies some injury to hands or arms among the members of a family. My informant said he had such a dream the night before a daughter fell from a bedstead and broke her right forearm.

Animal Transformations and Supernatural Beasts

At least one bird figures in a folk tale relating to it alone;[18] *r-ak?ač? cu:l* (mountain’s turkey) is the transformed shape of a young girl who scorched her maize while boiling off the pericarp and was run out of the house by her parents – and still she runs since

[18] Several birds and other animals appear in "The Hills and The Corn", Burkitt, 1920.

the bird is the lesser roadrunner.

Scientifically improbable changes of one animal into another are accepted as fact, or at least pondered, by Q?eqči? informants. The most plausible case is the evolution of feral house cats into *yakl* (Spanish: *gato montés*), which in fact is probably a fox since bobcats are not supposed to range so far south. In this case Spanish folk taxonomy is no less erroneous than Q?eqči?. Less easily accepted is the supposed change of aged snakes into bats or at least some sort of winged beasts (the plumed serpent?), and the evolution of *q?an c?uy* *č?o* rats into bats.

Most of the bump-in-the-night beasts are humanoid. The *a:num* is an ill-defined but horrifying apparition of large size (human or larger) while a *q?eq* (black) is smaller yet more definitely manlike and the *mausaxwi:nq* (not-good man) is or has become an equivalent of the Devil of Catholicism. The term *šilik?*, meaning goblin (Sp. *duende*), is listed in the dictionary but was never mentioned by my informants.[19] The taxonomy of these demons can remain safely vague since one's health and sanity are as much jeopardized by crossing the path of one of them as by meeting face-to-face. In any case the remedies for *wosol* (astonishment: terror) will be appropriate if not necessarily efficacious (see Appendix G, page 456). The *lut?* is an animal of unspecified appearance which is supposed to eat up the clothes of a person who refuses to give food or other goods to help

[19] Sedat, 1955: 165; all the Q?eqči? terms mentioned here are included in this work, though in another orthography.

support twin children (*lut?*, *pat* or *pa?at*).

Curiously, will-o'-the-wisp or marsh gas, *š-šam ax uč*, (opossum's fire), is realistically associated with rotting wood and is not generally given a mystical interpretation or feared.

Ritual and Medical Uses of Animals

There seem to be no clear cases of ritual use of wild animals comparable to such uses for wild plants. Of the domestic animals *alq?*, or *ketomq*) only roosters and tom turkeys are used in ceremonies of the church calendar, cofradias, house construction, and maize planting.[20] These cases are detailed in Chapters VI and IX (and Appendix G); they will not be repeated here. A vestige of the sort of reverence for game animals which was found by Redfield in Chan Kom,[21] can be read into the term for wild animals: *r-alq? cu:ltaq?a*, or (the non-Christian) God's domestic animals.

Only one medical use of an insect and two uses of non-insects were found. The ant-like *putiš* is gently stroked on the abdomen until it exudes a liquid which is supposed to heal infected cracks in the callouses of feet and palms (*se:ms / yoq?*), and according to William Sedat this practice is known among Pokom-speakers as well.[22] Though eggs, chicks, ducks and many other materials are used in divination-type cures, one direct medical use of an animal organ involves the odorous back of the "Pope's nose" (*š-kis kašlan*:

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[20] Cf. Wisdom, 1940: 388.

[21] Redfield and Villa Rojas, 1934: 48, 117-118.

[22] Sedat, personal communication.

chicken's fart). Q?eqči? sometimes suffer from blotches of pallid skin on their normally bronze faces (perhaps birthmarks, perhaps reflections of Germanic and Iberic genes in the Amerindian matrix), and these are supposed to disappear when rubbed with the *kis* of a chicken which is cross-sex to the patient. Second, the meat of skunks (*pa:r šul*) is a test remedy for magical fright (*šuwaxenak*), while that of buzzards is similarly used in madness (*kan ru*). An indirect use of an animal in curing – one which parents of young children will appreciate – involves collecting a nest of any rat or mouse (*č?o*), setting fire to it, and making a bed-wetting child sit in the smoke. Hummingbird (*c?unun*) nests are similarly used in cases of *šuwaxenak*.

Geography and Ethnobiology

The most obviously geographical aspect of ethnobiology is the relationship between the range of vocabulary – both in territory and lexicon – and the biologically established ranges of the named organisms. In terms of language evolution, the most interesting comparisons are those which show wide areal equivalence of taxa (e.g. *aq? / čakak?* thatch grass, common at least to Tzeltal, Yucatec, and Q?eqči?). In terms of culture history and migrations, the most interesting comparisons are those which indicate one or another life zone as probable former homeland, and those which contrast the prevalence of terms or place names with the abundance or absence of the organisms they represent. For example, *tišl* (tapir) appears all over maps of Alta Verapaz, yet hardly a one has been seen in the high-

lands in the last several years.

Unfortunately, comparisons of these sorts are tedious to make and do not often appear since they require familiarity with several cultures, languages and habitats. However, even a cursory reading of readily available dictionaries and word lists in other Maya languages will bring any number of intriguing coincidences to the reader's attention.[23]

[23] E.g. Edmonson, 1965; Roys, 1931; Herbruger and Diaz B., 1956.