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THE TASTE-NAMES OF PRIMITIVE PEOPLES.

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I. *The cautions to be observed in drawing conclusions from primitive vocabularies. Experiments in the Torres Straits.*

II. *Indo-Germanic taste-names.*

III. *The results of inquiry and experiment in other parts of the world.*

IV. *General comparison of the vocabularies denoting gustatory and other sensations. The phylogenetic antiquity and the consequently difficult analysis of the fused product of gustatory, tactual and emotional experience.*

I.

The study of the words given by primitive people to describe their sensations has hitherto been confined for the most part to a single field, the colour-sense. But the results warrant an extension of such inquiries to other senses. The colour-vocabularies, collected from various regions, show instances where a single word does duty for two or more colour-sensations, *e.g.* for black and blue or for blue and green; where brown receives no definite name; and even an instance where there is apparently but one specific colour-name, a word for red. A similar lack of differentiation exists, as we shall see, in primitive taste-vocabularies[1].

One is naturally prone to conclude that such features of confused nomenclature imply corresponding limitations in the degree of sensory acuity or discriminability. Yet, even if it be certain that dark-skinned

[1] While these pages were in the press, my friend Professor A. F. Chamberlain published an interesting paper on the taste-vocabularies of American Indians (*Amer. Journ. of Psychol.* 1903, vol. xiv. pp. 146—153), which confirms the general conclusions I had previously communicated to him.

people are relatively less sensitive to the violet, and more sensitive to the red end of the spectrum than are more advanced communities, this difference is probably insufficient to account for the surprisingly common absence of a specific word for blue in primitive colour-vocabularies[1]. Moreover, there are unquestionably other factors at work in determining the differentiation of the names of sensations. In the first place, it is quite conceivable that a sensation may not be of sufficient value or interest to receive a special name, although it is capable, nevertheless, of being fully experienced and discriminated. Were we, for example, to ask of a civilized community what objects they would describe by the words grey or bitter, the variety and incongruousness of their replies would be generally surprising. Yet such confusion is clearly not the expression of deficient sensitivity or discriminability; these people could easily learn the exact difference in meaning between the words grey and buff or between the words bitter and acrid. And in the second place, even when a lack of *discrimination* is found, the absence of *discriminability* is not necessarily implied. Certain instances of confused nomenclature may be simply due to insufficient pains having been taken to analyse sensory experiences. The ability to differentiate may exist potentially, and may, if occasion later arise, be carried into actual effect; just as any one of us can be taught by practice to resolve an impure tone into its constituent fundamental and higher partial tones.

But the attempt to explain the imperfections of primitive sense-vocabularies will be seen to involve a discussion of the play of psychological factors in the process of sensation generally; and into this obscure subject we cannot enter now. All that we would do here is to draw attention to a certain, though imperfect, correspondence of the features of taste- and of colour-nomenclature in primitive languages, and to the consequent possibility that their true explanation will be ultimately found to have a psychological rather than a merely physiological basis.

My attention came to be drawn to the taste-vocabularies of primitive peoples in the course of a few experiments which I made during my visit to the islands of the Torres Straits. Dr Seligmann and I tested the islanders with dilute solutions of sugar, salt, acid and quinine, and

[1] For a full discussion of primitive colour-vision see the following papers by W. H. R. Rivers,—*Reports of the Cambridge Anthropological Expedition to Torres Straits*, vol. II. pt. 1, Cambridge, 1901, pp. 48—96; *Popular Science Monthly*, vol. LIX. 1901, pp. 44—58; *Journ. Anthrop. Inst.* vol. XXXI. 1901, pp. 229—245.

thereby obtained their equivalent words or expressions for sweet, salt, sour and bitter. The most interesting results of this inquiry can be thus summarized[1]:

(1) The literal meaning of the phrase commonly used in the Torres Straits to denote sweetness is 'tasting good.'

(2) The same phrase is applicable to denote saltness.

(3) The usual word for saltness is derived from sea-water.

(4) The taste-names for salt and sour tend to be confused.

(5) There is no specific name for the bitter taste.

II.

Now if we examine the taste-names of Indo-Germanic languages, we shall find precisely these features repeated there[2].

(1) The original meaning of the Sanskrit √*svad*, to which the Greek ἡδύς, the Latin *suādeo*, and the English *sweet* are allied, was 'tasting pleasantly.' Apparently only later did the word acquire the narrower gustatory sense of sweetness; primarily it meant 'savoury' or 'tasty.'

(2) Thus it might with equal appropriateness have been applied to salt and to sweet flavours, salt having been almost universally prized by primitive people, and its taste enjoyed by them with relish. Indeed the Lithuanian word *saldùs* (cf. the Latin *sal*) thus acquired the meaning of spiciness and was thence applied finally to sweet flavours. Probably the old Slavonic *sladŭkŭ* and the modern Russian *sládkij*, which likewise mean sweet, had a corresponding origin. The Sanskrit *lavaṇa*, = salt, similarly came to be applied to lustre, grace and beauty; the same usage occurs also in Arabic, Persian and other languages.

(3) Our own taste-word salt, of course, is derived as in the Torres Straits from the tasted substance, the sea; and words with similar derivation prevail throughout Europe. Sweet is probably our only taste-word that had from its very origin a gustatory meaning; indeed the Indo-Germanic *sṷādus* (= sweet) is possibly related to *su* (= good) and *ed* (= to eat)[3]. Many European taste-names have been either borrowed or evolved from names which owe their origin to our other

[1] For a fuller account see the *Reports of the Cambridge Anthropological Expedition to Torres Straits*, vol. II. pt. 2, Cambridge, 1903, pp. 186—188.

[2] To facilitate comparison, the figures prefixed to the last paragraph correspond to those in the two subsequent sections.

[3] This conjecture I owe to Mr H. M. Chadwick, of Clare College, Cambridge.

senses. Thus the Latin *acidus* is derived from *aceo*, the Sanskrit *tikta* from *tij* (both of which mean to sharpen), our own *bitter* from the Anglo-Saxon *bítan* = to bite, and *tart* perhaps from the Anglo-Saxon *teran* = to tear[1]. As for the derivation of *dulcis* and γλυκύς and the relation of ὠμός, *amārus*, and the Sanskrit *amla* to each other and to the Semitic equivalents for bitter, they are too uncertain for inclusion here.

(4) The terms salt and sour are often confused in Europe. The peasants of Marchfeld, writes Mach[2], describe salt as *sauer*, "because the word *salzig* is not familiar to them." The Lithuanian word for salt is *súras* (cf. Anglo-Saxon *súr* = sour). Kiesow[3], in the course of his experiments upon children, found that almost without exception sour was called salt, and that a few persistently called bitter salt, until "their judgments were corrected by repeated practice."

(5) I made a few experiments in a small village of Aberdeenshire and even among the adults I met with precisely the same inability to give a distinctive taste-name to the dilute solution of quinine as I had found in the Torres Straits: they would call it a 'sort of acid' or a 'sort of salt' taste. To some extent, doubtless, this confusion of bitter with sour and salt is attributable to the similar tactile impressions which tend to accompany all three taste-sensations, varying according to the taste and its intensity from mere astringency to acridity, burning, and even pain. But apart from this it is quite certain that most people have a very vague idea of the sensation to which the word bitter should be restricted. In bygone days the word was applied in England to pungent, biting and saline tastes[4], and we still speak loosely of the 'bitter brine' and the 'Bitter Lakes.' In Latin, the word *amārus* was similarly used. In Greek πικρός was applied to sea-water, unripe fruit and to pungent flavours, while in Sanskrit the corresponding *tikta* is found used to describe the taste of a gourd, of mustard and other burning tastes.

[1] W. W. Skeat, *Principles of English Etymology*, First Series, Oxford, 1892.

[2] *Contributions to the Analysis of the Sensations* (Eng. Trans.), Chicago, 1897, p. 42, footnote.

[3] *Philosophische Studien*, Leipzig, 1894, Bd. x. S. 343, 344.

[4] *The Century Dictionary*, New York, 1889.

III.

The inquiry, thus begun, was extended to other primitive peoples by means of a *questionnaire*, which I addressed to officials, missionaries and Europeans resident abroad. The trouble taken by these unknown friends to secure for me reliable information has in many cases been surprisingly great. Very often they expressly tested the natives with dilute solutions of tasting substances in the manner which I had prescribed. My hearty thanks are due to them for the kind feelings that led them to interrupt the routine of their (often busy) lives in order to furnish me with the material I desired.

It is hardly necessary to point out the errors to which one is liable in an inquiry of this kind. Throughout I have used my discretion in selecting the most trustworthy returns[1]. As a rule, it was easy to gauge from the general character of the written reply how much care or knowledge had been brought to bear in answering the *questionnaire*. Perhaps the best evidence of reliability is furnished by the general broad agreement of the replies from very diverse parts of the world.

The questions which I asked were the following:—

"I. By what word or words in their own language would natives describe the taste of solutions (1) of sugar, (2) of salt, (3) of *weak* acid, (4) of quinine (*i.e.* the tastes we call sweet, salt, sour, bitter)? [The value of the results will be much enhanced if opportunity allow of specially conducted experiments by applying the above solutions to the tongue of even a single native. Specially mention if the given information is based on such experiments.] Possibly the same word is given to two tastes."

"III. Give, if possible, the exact meaning of the words in I. [For instance, are the taste-words borrowed from the tasted substances (as in our English 'salt')? Had they the original meaning of softness, sharpness, etc., or have they given rise to such meanings secondarily? Or do they mean merely pleasant and unpleasant?]"

(Questions II., IV., and V. were not concerned with the subject now at issue.)

[1] In a few instances, by the advice of Mr S. H. Ray who has kindly read through my manuscript, I have made slight alterations in spelling. I have, I hope, acknowledged all the various sources of my information in the footnotes. But in order to save burdening this paper with excessive detail and unnecessary repetition, I have omitted many otherwise valuable returns, especially those which reached me after the manuscript had gone to press. I am indebted to Professor Bendall and Mr E. C. Quiggin of Gonville and Caius College, and to Mr E. H. Minns of Pembroke College, Cambridge, for help in the languages with which they are specially familiar.

(1) In Uganda[1] there are two taste-words, *kuwoma* and *kawa*, the former being applied to sweet, salt and other agreeable flavours, and the latter to unpleasant flavours. Thus, *kuwoma* is used for the taste of sugar and for that of certain sour fruits liked by the Baganda. In Aulua Malekula, in the New Hebrides[2], a similarly primitive taste-vocabulary is found: the words *garakhar* and *kokon* are respectively used for pleasant and unpleasant tastes.

(2) The use of a common word, applicable both to sweet and salt tastes, has been already alluded to. It occurs also (α) among the Golo folk of the central Sudan[3], (β) in the Akan dialect of Ashanti[4], (γ) in three dialects spoken south of Lake Victoria Nyanza[5], (δ) in Dakota[6], (ϵ) in the Bugotu dialect of Isabel Island[7], (ζ) in Yoruba[8], and (η) in Swahili[1,9]; the respective words, each of which was used by the natives to describe both sweet and salt tastes, being (α) *don-du-teh*, (β) *de*, (γ) *kunona*, *kunulila*, *kujomelela*, (δ) *skuya*, (ϵ) *mami*, (ζ) *dun*, and (η) *tamu*.

(3) The taste-word for salt, where it exists, is commonly derived from sea-water. Often a foreign word, having this origin, has been introduced, as in New Britain, the Loyalty Islands, Samoa, etc. Salt is not mentioned in the Rig Veda. In Hindi[10] *khari* (= salt) is derived from *khar*, a dry grass which is burnt to produce the substance. Salt is similarly made in Uganda, but their (Lusoga) word *muka* (= salt taste) has not an obvious derivation. In many tongues, *e.g.* in the Nyoro dialect of the Toro people, East Africa[11], there appears to be no word for the salt taste: they say *okunulira* = it has a pronounced flavour. So, too, the Ainu phrase[12] returned for sweet is *kera an* = there is flavour; and the Malay *manis* probably has a similar meaning, as it is often coupled with the word *banya* (= very), even when only a slight degree of sweetness is implied. Likewise, the Persian word for sweet is *ṫatli*, derived from *ṫat* = taste.

But the Persians also use *shirin* for sweet, derived from *shir* = milk. A sickly sweet taste is called *prítornyj* by the Russians, who also employ it to denote insipid and fatty tastes. The Toaripi (British New Guinea) word for sweet likewise means fat. *Kami-kamidha*, the equivalent for sweet in the Bau dialect of Fiji[13], is applied to tender pork and to

[1] Rev. J. Roscoe. [2] Rev. T. Watt Leggatt. [3] Captain S. L. Cummins, R.A.M.C.
[4] Anonymous correspondent. [5] Rev. F. H. Wright.
[6] Stephen R. Riggs, *Grammar and Dictionary of the Dakota Language*, Smithsonian Institute, Washington, 1852.
[7] Rev. H. Welchman. [8] Rev. J. Harding. [9] Rev. A. Crabtree.
[10] Captain A. Mudge. [11] Mrs Fisher. [12] Anonymous correspondent.
[13] Dr Glanvill Corney, Mr H. Monckton, and Captain W. W. Wilson.

succulent food generally. Such an association of sweet and fatty tastes is not easy to explain[1]. It may conceivably have arisen from the soft smoothness of very weak or from the syrupy nature of very concentrated sweet solutions; but a truly fatty taste accompanies bitter fluids rather than sweet[2]. Probably our word 'luscious' is a guide to the fitness of these words.

A further difficulty comes from the north-east of British New Guinea. The Binandele people[3] rendered sweet by *be damo-damo*, which means 'cooling the mouth.' From an independent source[4] I obtained a corresponding word from the Bou people, who live in the mountains near the Wamira district of the same island; their expression for sweet is *wainuau baubana*, which means 'cooling the heart.'

It is natural to find sweetness associated with honey. But there is little evidence to show that honey gives the name to its taste as sea-water so commonly does. On one occasion a Mabuiag islander of the Torres Straits[5] called the sweet solution *wam mitalnga* = thing tasting of honey; but his generic word for sweet is *kapu mitalnga* = thing tasting good. The word returned from the Endeavour River district, Queensland (Koko-Yimidir dialect[6]), is *murla* = honey or bee. The Awalama folk near Wamira, British New Guinea[4], called the sweet solution *wigougauna* = like honey. The Hindi and Punjabi *mitha*[7], = sweet or pleasant to the taste, is allied to the Sanskrit *madhura* (cf. *madhu* = honey, ? *mad* = to delight[8], and our English *mead*).

Our word *sour* may have a twofold connexion. It is probably allied to the sour-tasting sorrel, and by some it has been related to ξυρός (√ ξυ = to scratch). Analogous connexions are commonly met with in other languages. Thus, the Sanskrit *amla* = sour is used for sorrel and is possibly related to *ampfer*, the German word for this plant. So also the Hindi[7] *chuk* (= sour) is used for the French sorrel (*Rumex montanus*), the Punjabi[7] *khata* may be connected with *khat*, a very sour plant, and the Fijian[9] *wiwina* with the fruit *wi*, the Brazilian plum, which is very sour when unripe. Less frequently the word for

[1] It is a curious coincidence that Aristotle (*De Anima*, lib. II. cap. 10 § 5) expressly places the fatty or oily taste near to the sweet.

[2] F. Kiesow, *op. cit.* S. 525. Oehrwall, *Skandin. Arch. für Physiol.* 1894, Bd. II. S. 9.

[3] Rev. Copland King.

[4] Rev. E. L. Giblin.

[5] Dr C. G. Seligmann.

[6] Rev. G. H. Schwarz and Dr W. E. Roth.

[7] Captain A. Mudge.

[8] Cf. A. Fick, *Indogermanisches Wörterbuch*, Göttingen, 1890, Th. I. S. 105.

[9] Dr Glanvill Corney, Mr H. Monckton, and Captain W. W. Wilson.

sour is derived from 'turned' milk. Corresponding to the just-mentioned relation of sour to $\sqrt{\xi v}$, we have in Malay[1] *gigi nilu* = the teeth stand on end; in the Wamira district of N.E. British New Guinea[2,3] *i vigora* = it bites; in Taupota of this region[2] *i vivo turu-turaa* = it kills the teeth; in Mukaua, also of this region[3], *i i nao bai raumite-mitena* = it causes the face to be wrinkled; in Mota, Banks' I., *gogona* from *gona* = tied up in a knot[4]. The Nyoro[5] word for sour is *enturo* = spittle-creating, and the Malagasy word[6] is *mahari-kivy*, with precisely the same meaning.

(4) Confusion between salt and sour, and more especially between salt and bitter taste-names, is frequently met with. In New Guinea[3], in the New Hebrides[7], and throughout a great part of Polynesia, a common word is used to denote salt, sour, and bitter tastes. The Arabic *ḥamid* is applied to salt and bitter as well as to sour tastes. The Somali *danan* is applied to lemons and to salted meat. All these words doubtless mean rough, unpleasant or biting.

(5) In Aulua Malekula, New Hebrides[8], in the Suto language of the North Transvaal, in Uganda[9], in the Bugotu dialect of Isabel Isl.[10], and in Toaripi, British New Guinea[11], the respective words *kokon, ba-ba, kawa, aha* and *eakere* equally express either sourness or bitterness. A notion of distaste, astringency or pain underlies all these words. The Russian *gor'kij* = bitter, with which perhaps *gorét'* = to burn is connected, properly means pungent; so also the Sanskrit *kaṭuka*, which is probably connected with $\sqrt{kriṭ}$ = to cut (cf. Lithuanian *kartùs* = bitter). The Mukaua folk[3] called the bitter solution *i i kawasiqariqari* = it irritates the mouth; those of Bou[3], also in British New Guinea, called it *waipolana* = burning; those of Awalama[3], of the same district, *witururuana* = causing numbness[4]. The taste-name for bitter among the Suto folk of the N. Transvaal[9] is *ba-ba* = astringent; among the Kaguru of Central Africa[10], it is *usungu* = painful; among the Gogo folk[11]

[1] Mr H. N. Ridley. [2] Rev. Copland King. [3] Rev. E. L. Giblin.

[4] It is naturally impossible to say how far these and other returns represent the generic taste-words in ordinary use and how far they were invented on the spur of the moment by the subject under investigation. Several of them, however, were corroborated independently by other natives, although others may have been specially employed for the occasion, as Dr Rivers found to be sometimes the case in the colour-nomenclature of Torres Straits (*op. cit.* p. 61).

[5] Mrs Fisher.

[6] Rev. J. Richardson, *A New Malagasy-English Dictionary*, Antananarivo, 1885.

[7] Rev. W. Watt. [8] Rev. T. Watt Leggatt.

[9] Mr P. C. Jonas. [10] Rev. A. North Wood. [11] Rev. H. Cole.

kali = fierce; and in Fiji[1] *mbaku* = astringent, or *nga-nga* = pungent. In several languages it is also used to mean 'poisonous.'

IV.

The features with which we thus meet in taste-vocabularies are to some extent represented in vocabularies pertaining to other senses. Just as sour and bitter or sweet and salt are often described by a common name, so the words for blue and black are usually found undifferentiated in primitive languages. The derivation of the word for saltness (and sometimes of that for sourness) from the tasting substances is paralleled by the fact that most colour-names have been borrowed from the names of the coloured objects. Again, as in taste, so in hearing recourse was had to words expressing tactual or muscular sensations, when tones were classed according to their pitch, as *acutum* or *grave*, or as *ὀξύ* or *βαρύ*.

To primitive man, of course, brown and grey were presentations as unique as blue or red, differences of *timbre* seemed as elementary as differences of pitch, and astringency, oiliness and alkalinity were gustatory sensations as simple and pure as sweetness and bitterness[2]. But in respect of later analysis taste has always laboured under special disadvantages, compared with the other four senses. The frequent association of sensations of taste with those of olfactory origin and their

[1] Dr Glanvill Corney, Mr H. Monckton, and Captain W. W. Wilson.

[2] The following taste-vocabularies are of interest in this connexion:—

(α) *Sanskrit*: sweet, salt, sour, bitter, pungent and astringent. Six tastes were so universally recognized in ancient India that the tastes became the chronogram for the number six. In the Suśruta the *gustus aquarius* is described as being composed of six tastes, of which sweet, salt and acid are pleasing and heavy, bitter, pungent and astringent are rough and light.

(β) *Newâri*, a Tibeto-Burman language of Nepal, from the 14th century onwards: sweet, salt, sour, bitter, astringent and savoury. (Cf. Conrady, *Ztsch. d. deutsch. morgenländ. Gesell.* Leipzig, 1893, Bd. XLVII. S. 558.)

(γ) *Greek*: sweet, salt, sour, bitter, astringent, dry, pungent, vinous and fatty (or oily). (Aristotle, *De Anima*, lib. II. cap. 10 § 5; Theophrasti Eresii *Fragmenta, De sensu et sensibilibus*; Plutarch, *Questiones naturales*, v.)

(δ) *Mediæval Italian*: sweet, salt, sour, bitter, astringent, dry, fatty, insipid and acrid. (Joanne Bravo, *De saporum et odorum differentiis*, Venetiæ, 1592.)

(ε) By *Luchtmans*, 18th century: sweet, salt, sour, bitter, astringent, vinous, alkaline, unctuous, insipid and acrid.

(ζ) By *Linnaeus*: sweet, salt, sour, bitter, dry, aqueous, mucous, fatty, styptic and acrid. (The last three classifications are cited from W. Horn, *Ueber d. Geschmacksinn d. Menschen*, Heidelberg, 1825.)

intimate fusion with disturbances of tactual or common sensibility have always made investigations very difficult. In few senses as in taste do we find such feeble powers of subjective analysis, or such a close relation with general emotional tone. Long ago it was written of tastes,—*τοῖς πάθεσι καὶ ταῖς ἡδοναῖς διαφέρουσι*[1]. And the most primitive taste-vocabularies, as we have seen, are based upon mere changes in affective tone. Substances are primarily classed according as they are tasteful or distasteful; the differences, for example, between sour and bitter are considered less striking than their common impalatability.

It seems likely that the intimate connexions between sensations of taste, touch and emotional tone, to which the vocabularies of primitive peoples thus bear witness, date back to a very early period of phylogenesis. For in the skin of fish occur beaker-shaped organs, which have the same structure as that of mammalian taste-buds and are continuous with similar end-organs within the mouth. And in children it has been shown that gustatory sensibility is spread throughout the mouth and pharynx far more widely than in adult life[2].

[1] Theophrastus, *loc. cit.*

[2] Kiesow, *loc. cit.* S. 345—348.

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