# *Sinhalese Technical Terms In Physiology and Biochemistry**

THE Government of Ceylon is engaged on the task of producing glossaries of technical terms in Sinhalese and Tamil. The preparation of these glossaries is done by Glossary Committees and the Commissioner of the Official Language Department is responsible for their publication. A Glossary Committee consists of a Chairman, a Secretary, one or more language scholars, and representatives of the field of study which is being dealt with. The Chairman and Secretary are full-time officers of the Official Language Department. The others serve on the Committee by invitation and are paid an honorarium.

At present, Science and Medicine are taught in the University of Ceylon in English, but it is felt that, sooner or later, they may have to be taught in the Swabhasha (national languages). The Government was going ahead with the task of preparing technical terms and it expected help from the University. The University in its turn has readily granted permission to its members to serve on Glossary Committees.

In the field of *Medicine*, both western and indigenous medicine are represented on the Committee, and two Sinhalese glossaries have already been produced by the Government. The first of these, published in 1956, was intended to cover the requirements of technical terms in Hygiene and Physiology for the G.C.E. (Ordinary Level) examination; one of us (S.R.K.) served on this Glossary Committee. The second, published in 1960, was a Medical Glossary intended to supply technical terms for nurses; two of us (V.B. and S.R.K.) at different stages participated in coining terms for this glossary. The Government next set about preparing technical terms for use at University level, and, for a start, two Glossary Committees were appointed, one for Anatomy and the other for Physiology and Biochemistry. The authors of this paper served on the latter Committee. The Chairman of both Committees was a medical man, Dr. A. G. H. Thabrew. The Glossary of Technical Terms in Physiology and Biochemistry will be published in due course.

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The Official Language Department did not lay down rules to be followed in the preparation of glossaries. The various Glossary Committees were left free to evolve their own techniques of handling the problem. The price of this freedom was that a certain amount of inconsistency and confusion did arise; these defects were also partly attributable to the fact that the earlier (elementary) technical glossaries were made without any real awareness that the technical terms in them should suit even the later (more advanced) glossaries.

We wish to give an account of the system which the Glossary Committee used in the preparation of the Sinhalese glossary in Physiology and Biochemistry. The selection of the English technical terms for this glossary had to be somewhat arbitrary. There is hardly a medical term which does not have some connection with Physiology and Biochemistry which are, after all, two sciences that are among the "institutes of medicine". Much had to be left out, and the (English) technical terms chosen were those which are used in current practice in the teaching of Physiology and Biochemistry to medical students. Some overlap with other fields was inevitable, especially with Anatomy. The Glossary is intended primarily for the person who is writing on Physiology and Biochemistry at University level (and not necessarily for the newspaper or popular science magazine). Throughout the compilation of this glossary we had to keep in mind the fact that the terms coined should suit not only Physiology and Biochemistry but also all other medical sciences.

In the course of preparing the Glossary we came to recognize certain *principles* to guide the work. The *first* was that a *technical term should not be confused with a lay term or a "popular science" term.* The lay word for *abdomen* may be බඩ but no one would consider it appropriate for a technical glossary. *Abdomen* has a precise meaning in technical usage, whereas බඩ is a lay word which has no precise meaning—it can mean stomach, belly, womb, pith, proximity, inside. There are usages of the word *abdomen* for which බඩ would be inappropriate or inapplicable, e.g. in phrases like *posterior abdominal wall, abdominal ring* and *acute abdomen,* and in compound words like *abdominohysterectomy.* බඩ may suit lay English word *belly.* But we are tilting at an imaginary instance: no one has suggested that in a technical sense *abdomen* should be translated by බඩ; the Sinhalese word for abdomen is උදරය.

We learn that in Japan the student's first lessons in physics are devoted to new and more complex (but much more precise) groups of characters

to replace the everyday characters of heat, temperature, etc. (UNESCO, 1958). In the development of technical terminology in Chemistry, homely terms such as the following were in use: oil of vitriol, butter of arsenic, liver of sulphur, sugar of lead, flowers of zinc, milk of magnesia; terms which Dumas remarked gave the impression that the chemists borrowed their language from the kitchen. Lavoisier pointed out that such terms are positively dangerous because most of these substances are poisonous. Such considerations led to the systematizing of chemical nomenclature by the work of national and international Commissions which invariably used Latin and Greek roots for the coining of technical terms (Ihndris, 1961).

Let us take some Sinhalese examples which are being used in translating technical terms in Physiology.

1. *Cardiac* හෘදසන්න (close to the heart). The condition called *achalasia of the cardia* has nothing to do with the heart. The technical term for *cardiac* is කන්තුක which would suit all the medical contexts for *cardiac*.

2. *Coagulum* කැටිය (clot). කැටිය is the right word for clot, but it is inadequate for *coagulum*: a coagulum can be a clot or a jelly, and the rapid advances in the field of blood coagulation may even necessitate a distinction between the *clotting* of blood and the *coagulation* of blood. A word can take on, with the passage of time, a sharpness of meaning which it did not originally possess; it would horrify the physiologist to call the glomerular filtrate an exudate (instead of a filtrate or transudate), but this is precisely what Bowman did in 1842 in his classical description of the working of the kidney.

3. *Coronary* හෘදික (pertaining to the heart). The coronary arteries supply the heart muscle, but to call them හෘදික ධමනි (heart arteries) is misleading as then one ignores the fact that there are structures with the epithet *coronary* in regions outside the heart, e.g. coronary ligament of the liver. The technical term for *coronary* is කිරීටක.

4. *Germ* විෂබීජය (poisonous seed). This is insulting to the mass of germs which, far from poisoning, actually help us. The correct technical equivalent for *germ* is ජනකයා.

5. *Tetanus* පිටගැස්ම. Tetanus is a highly technical word while පිටගැස්ම is a lay word which could be looked upon as the equivalent of the term

*lockjaw* which is a lay English word for this condition. If one equates පිටගැස්ම to *tetanus*, it would be impossible to talk of *tetanus* in a single muscle.

6. *Paralysis* පක්ෂඝාතය (striking down of one side). Here paralysis has been rendered with only one application in mind i.e. paralysis of one side of the body (hemiplegia). පක්ෂඝාතය will not be suitable for, say, paralysis of the vasomotor nerves or of the bladder. The technical term for paralysis is පරාශ්‍රයය while *hemiplegia* is අර්ධඝාතය.

7. *Uvula* රසදිව (taste tongue). *Uvula* should not be rendered by the lay term රසදිව seeing that there are uvulae in the cerebellum and bladder too. If one used රසදිව for uvula, how could the condition *uvulitis* be translated?

The above examples show that a technical term for a thing, process or concept becomes necessary when the lay term is either *non-existent* or *exists but is unsatisfactory*. This is at once evident in the scientific nomenclature of plants and animals. A lay term becomes unsatisfactory because it denotes *less* than the technical term does as in මදයසාරය (intoxicating essence) for alcohol;* or because it denotes *more* than the technical term does, thereby having all manner of associations which render it diffuse and imprecise for technical usage, as ද්වාරය (opening) for hilus. The latter corresponds to what Ogden and Richards (1949) have called Degenerates, "because of the multiplicity of their associated referents". As these authors say, "there is much scope for what may be called the Eugenics of Language, no less than for the Ethics of Terminology".

Therefore it becomes evident that the only method of ensuring that no confusion will arise is *to avoid in general a lay term* in Sinhalese in translating an English technical term. This is the *general* rule which we have followed. In this way, one coins a Sinhalese term which will come to mean neither too much nor too little when placed beside its English technical counterpart. A safe way of achieving this aim is to give a word which to the lay person has no meaning and therefore can stand exactly for what it should represent—that is to say, a *latent* word. It is well known that there are hundreds of lay English words connected with medicine which have English technical equivalents which very rarely convey any meaning to the layman.

*e.g. Glucose, Vitamin A and Glycerol are alcohols.

It is admitted thatwhile adherence to a rule would ensure complete consistency, rigid adherence is not always possible. For a rule is not an end in itself; it is a device for the fulfilment of the purpose. It is a convenience or a convention to facilitate the attainment of an end. However, if the end can be satisfactorily achieved outside the confines of the rule, we can afford to ignore the rule. In fact we have numerous exceptions to this rule in the Glossary since there are words which are ordinary Sinhalese words but nevertheless fulfill the *purpose* of the rule by standing for *something specific* and not giving rise to confusion which arises from associated meanings. Such words are especially safe when the English technical term is not productive of flexions and combinations.

Here are some examples:—

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|---|---|
| *Asthma* | ඇදුම |
| *Condiments* | කුළු බඩු |
| *Exercise* | ව්‍යායාමය |
| *Enema* | වස්තිය |
| *Fatigue* | විඩාව |
| *Goitre* | ගලගණ්ඩය |

It has to be borne in mind that a lay term in one language can become a technical term when transliterated into another language. This is simply because of the fact that when it is used in the second language in a technical sense, the lay term in the first language has no meaning and can therefore be made to stand for something specific e.g. *beri beri* which is derived from the Sinhalese බැරිය, or *kwashiorkor* which comes from a West African word *kwashi*, first, *orkor*, second, so named because the disease commonly affected a child who was weaned prematurely on account of the mother becoming pregnant during this time (Trowell, Davies and Dean, 1954). The virtue of such words, when they are transliterated into English, lies in their very incomprehensibility. This incomprehensibility means that to the English such terms are uncoloured by common associations and therefore highly suitable for precise usage, in other words, for technical usage.

The obverse of the decision to give a learned term in Sinhalese for a learned term in English is to give *an ordinary word in Sinhalese for an ordinary word in English*; where such English words which refer to parts of the body or bodily processes were required for the teaching of Physiology and Biochemistry, they are included in the Glossary.

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|---|---|---|
| e.g. | ankle | වළලුකර |
| | bile | පිත |
| | blood clot | ලේ කැටිය |
| | cane sugar | උක් සීනි |
| | disease | රෝගය |
| | dose | මාත්‍රාව |
| | groin | ඉකිලිය |
| | thirst | පිපාසය |
| | wet-nurse | කිරි මව් |

This is not always possible. *Itching*, for instance, is more than කැසීම (scratching), and fat මේදය has to be distinguished from *oil*, තෙල.

Furthermore, a word that appears to be an ordinary word may in reality have technical usages which should make one beware of giving it the first Sinhalese word that comes to mind. It is tempting to dispose of *flavour* with රස. But රස is *taste* which is not the same as *flavour*. Taste is a sensation while flavour is a perception arising from the combination of taste and smell. An onion has a characteristic pungent flavour. If one chews an onion with the nose closed, one misses altogether the flavour of onion and instead merely experiences a sweetish taste. රස cannot stand for flavour in a *technical* glossary which is only concerned with words to to be used in *technical communications*.

Just as we have ordinary Sinhalese words for which there are no equivalents in English e.g. කබ (inspissated lachrymal secretion or exudate), පැරෙනවා (hurting a sore), there is no Sinhalese word available for the ordinary English term *tenderness* where tenderness means abnormal cutaneous sensitivity to touch.

Thus the position with regard to the adoption of lay terms in a technical glossary is this: *examine the lay term whenever one is available, and if it is neither too narrow nor too broad in its meaning, adopt it for technical usage.*

A *second* principle or rule which is useful in preparing a technical glossary is *to deal with individual words and not with phrases.* The English technical word should be given a separate Sinhalese or Sinhalized term. In phrases the technical words often have *limited meanings.* Take *clinical thermometer* as an example. Now උණ කටුව (fever thorn, fever bone) is the lay term for clinical thermometer and usage has shown it to be adequate for the language one speaks at home and in the street, but it is wrong to take

උණ කටුව as a technical term. Neither *clinical* nor *thermometer* are even faintly represented in උණ කටුව. One has been led by the *meaning* of the phrase (and a restricted meaning at that, since a clinical thermometer has other uses than that of finding out whether a person has fever) rather than by the individual words. The closely related term clinical thermometry cannot be derived from උණ කටුව. Further, when *clinical* has to be used in another context e.g. *clinical pathology*, clinical can no longer be rendered by උණ. If thermometer was rendered by කටුව the phrase *skin thermometry* may become සම කටුගැසීම, which is ludicrous. Another example is *appendicular skeleton* ගාත්‍රා සැකිල්ල (limb skeleton). Here, *appendicular* is given the same word as *limb*. This mistake would not have occurred if *appendicular* and *skeleton* were dealt with separately. On the other hand *appendicular abscess* has been called උණ්ඩුකපුච්ඡ විස්ඵෝටය. Thus *appendicular* has two Sinhalese equivalents (*a*) ගාත්‍රා, (*b*) උණ්ඩුකපුච්ඡ Then the translator could well make the mistake of rendering *appendicular abscess* as ගාත්‍රා විස්ඵෝටය which means abscess of the limbs.

The fault illustrated above of rendering technical phrases by giving meanings, often 'superficial' meanings, is also encountered with single words. Here are two examples: *incubation* has been translated as බීජෝෂණය, which literally means the heating of eggs; but one can incubate objects other than eggs and germs—one can incubate infants; and heat is not essential for incubation. *Alimentary*, ආහාර මාර්ගීය (pertaining to the food passage), apparently because the Sinhalese phrase seems to suit the word *alimentary* in phrases like *alimentary canal* (ආහාර මාර්ගය—from which one can see that මාර්ගය is not an intrinsic part of *alimentary*) and *alimentary secretion* (ආහාර මාර්ගීය ස්‍රාවය). But terms like *aliment* or *nutrient* should get separate words in their own right rather than be called *food*. *Food, aliment* and *nutrient* are not synonymous (Sinclair, 1948). *To give meanings to technical words is the function of a dictionary and not of a glossary.* A technical term often has more than one meaning and to translate such a term according to meaning is to ignore this fact or to end up with *a brood of Sinhalese terms for each English term.*

Having decided to give, generally speaking, an ordinary Sinhalese word for an ordinary English word (like සැරව for *pus*), and a latent Sinhalese or Sinhalized word for the latent English word (like ආරාබිත්තිය for *metabolism*), we have the problem of how to set about being latent. It must be stressed that latency is preferred not for its own sake, but for getting a word which can have a specific meaning. There are three ways of doing this.

The easiest way perhaps is to concoct an artificial sound—any sound so long as it is sufficiently *gibberish*—and to call it a technical term.

A second method is to *transliterate* or Sinhalize the English term. This has happened in countless instances with regard to words in common usage. Here are 10 words which today are ordinary Sinhalese words but which come from 10 different languages:

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|---|---|---|
| Afghan | බායි | (*bai*—Afghan) |
| African | කාපිරි | (*kaffir*) |
| Amerindian | මඤ්ඤොක්කා | (*manioc*) |
| Arabic | අරක්කු | (*arrack*) |
| Dutch | කන්තෝරුව | (*kantoor*—Office) |
| English | තාර | (*tar*) |
| Hindi | සාරිය | (*sari*) |
| Malay | සරම | (*sarong*) |
| Portuguese | සපත්තුව | (*shoe*) |
| Tamil | සුරුට්ටුව | (*cheroot*) |

Similarly we could say:

| | |
|---|---|
| *aorta* | එයෝර්ටාව |
| *biceps* | බයිසෙප්සය |
| *carcinoma* | කාර්සිනෝමාව |
| *diastole* | ඩයස්ටලය |
| *endocardium* | එන්ඩොකාර්ඩියම් |
| *fossa* | පොස්සාව |
| *gonadotropin* | ගොනැඩ්ට්‍රොපින් |
| *hernia* | හර්නියාව |
| *ilium* | ඉලියම් |
| *jugular* | ජගුලර් |

The third method is to *translate* with a latent (learned) word built out of a *root taken from Sanskrit, Pali or other language.* If Sinhalese words with fairly specific meanings are available, they can be used. The words of the preceding list may then become :

| | |
|---|---|
| *aorta* | ප්‍රාහෘදය |
| *biceps* | ද්විමූර්ධය |
| *carcinoma* | කුලීරමාව |
| *diastole* | විනාඃස්තය |
| *endocardium* | අන්තෝකන්තුව |

| | |
|---|---|
| *fossa* | ලේණය |
| *gonadotropin* | රෝහීවර්තනය |
| *hernia* | වර්ධිමය |
| *ilium* | ජඝනය |
| *jugular* | කන්දරික |

Of these 3 methods, the *gibber* method may, on theoretical grounds, lend itself to the construction of a perfectly logical system of technical terms. But it is an arbitrary, artificial and rootless method. There is strong circumstantial evidence against it. The brilliant ideas of Dalgarno and of Bishop Wilkins who, 200 years ago, advocated the construction of just such a gibberish language, are only of historical interest. Today, new technical terms, like *ataractic* and *cybernetics*, are not coined on that basis, but most commonly from words or roots taken from actual languages (e.g. *ataractic* from Gk. *ataraxia*, absence of disturbance i.e. tranquillity; *cybernetics* from Gk. *kybernetes*, steersman). Even the inventors of artificial languages like Esperanto, Ido, Interlingua and Volapuk have based their vocabularies not on gibberish but on roots which already exist in natural languages.

The *transliteration* method has tremendous advantages.

(i) The technical terms will have an *international* flavour. Scientific work is an international activity and it is widely recognised that an international scientific language is a crying need. There is already a sizeable international vocabulary of technical terms, most of which are built out of Greek and Latin roots. e.g. *adductor, bacteriology, calorie, dystrophy, endometrium, fibroma, gastrectomy, hyperglycaemia, infarction, jejunum.* It would be a retrograde step to depart from this tendency to use a technical vocabulary which is international in character. It would be a hindrance to scientific communication.

One of the basic principles laid down in 1955 by the Board of Scientific Terminology of the Hindi Division of the Ministry of Education in New Delhi was that international scientific and technical terms should be adopted as such into Hindi and the principal languages of India. A similar attitude has been adopted in Japan and in Indonesia (UNESCO, 1958).

(ii) The *reading of English* technical books and papers will be facilitated if the Sinhalese technical terms are the same as the English ones. The importance of English to the scientist today (and for several tomorrows at least) is beyond question. He will have to read English journals to keep

abreast with new work, and English textbooks to gather adequately even the basic knowledge in his field.

In this connection we might mention that in 1948-49 the Indian University Commission, while recommending that as a medium of instruction for higher education, English be replaced as early as practicable by an Indian language, also recommended that "English be studied in high schools and in the universities in order that Indians may keep in touch with the living stream of evergrowing knowledge". A similar view was expressed in 1953 by the Association of Scientific workers of India who stated that "a knowledge of English is essential for both the students and the science teachers at the university stage so that they can keep in contact with recent developments in their fields" (UNESCO, 1958).

If the technical terms in Sinhalese are altogether different from the technical terms in English, the student will have to learn the latter—thousands of them. Is it justifiable to impose this burden on our future scientists, when there is a way of avoiding it (viz. by transliterating)? Will we be stultifying ourselves ? The great danger of imposing a burden is that the burden may, because of its heaviness, be thrown away. Plainly, the effort required of a Sinhalese-taught man to read English with its own vocabulary of technical terms may be so great as to discourage the reading of English. Perhaps most of us know it from our own experience of German and French. We did not learn these languages in school but tried to pick up something of them when we read for our University degrees. Difficulties with grammar and vocabulary make the reading so effortful that we either hardly read German and French or else read only a fraction of what we would read if the reading were less toilsome. This is the case in spite of the fact that the technical terms in French and German are often identical with those in English. Had they too been different, how much worse would the position be ! Therefore if we seriously believe that our future scientists must read English, we must either teach them in English or transliterate the technical terms.

(iii) Another advantage in transliterating is that the task of preparing a glossary becomes simple and quick as far as transliterated terms go. Time has to be spent only in deciding which terms are to be transliterated, and in shaping each term so that it sounds like Sinhalese i.e. it is Sinhalized. We know that in common language *brilliant* has become බ්‍රිලියන්තු, engine, ඇන්ජිම, shock absorber ෂොක්ඇබ්සෝබර් and so on. It is a matter of taste and a feel for the language. It is a job for the linguist who also has

his feet planted in the solid ground of the common language of the country, since it is the common language which has, by force of circumstances, shown the largest influx of transliterated terms.

There is the question of how one should pronounce the basic part of of the word. Should *vagus* be වේගස් (as the English pronounce it) or වාගුස් (as the European Continental does ? ) The corresponding Sinhalized forms would be වේගසය and වාගුසය respectively. Should *brachium* be බ්‍රේකියම් or බ්‍රාකියුම් ? The Continental pronunciation has the advantage of being systematic and consistent. Even the English-speaking person will understand it, although it may sound odd to him. But our historical circumstances have given us strong links with English rather than with Continental pronunciation in the bulk of the words that we have borrowed into Sinhalese in recent centuries. Transliterated English words that have crept into Sinhalese usage have carried with them the characteristics of English pronunciation. e.g.

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|---|---|---|---|
| bus | බස් | (and not | බුස්) |
| engineer | ඉන්ජිනේරුවා | (and not | එංගිනීරුවා) |
| pressure | ප්‍රෙෂර් | (and not | ප්‍රෙසූර්) |
| solution | සොලුෂන් | (and not | සොලුත්සියොන්) |
| vulcanize | වල්කනයිස් | (and not | වුල්කනීස්) |

Historical circumstance has led us to learn all our technical terms with English pronunciation. The most natural thing to do at present would therefore seem to be to transliterate on the basis of the English rather than the Continental pronunciation of words.

Transliteration, however, has not been systematically taken up by the Glossary Committee. There is no question that international terms like *metre, calorie, gram, radio and ketone* should be transliterated and never translated. This applies to units of measurement, chemical names, the scientific names of plants and animals, and similar clear-cut instances. Outside the above categories other examples in the Glossary include *cell* සෛලය and *ganglion* ගැංග්ලියම්. Even if such transliterated terms sound un-Sinhalese, it cannot be helped. But what of the rest ? e.g. *adduction, decerebellation, flatulence, gigantism, hibernate, immunize, intermediary, lobule, micturition, narcotic.*

The Committee felt that the controversial question as to whether to translate or to transliterate *en masse* would resolve itself if and when scientific

communication in Sinhalese does actually take place. The Committee decided to translate all the technical terms except clear-cut cases of international terminology and to leave it to the actual users of the glossary in the future to decide which terms to accept in the translated form and which to discard in favour of transliteration. Transliteration is a relatively simple matter when compared with translation, and could be easily and readily accomplished. The Committee addressed itself mainly to the problem of careful translation. In the Glossary, transliterated forms were sometimes placed side by side with the translated form, to indicate that the Committee felt that there was a strong case for using the former rather than the latter in these cases.

The Committee has to some extent therefore shifted the responsibility of using transliterated terms where the translated form is also given, on to the future teacher and future writer. There are dangers in this.

(i) It invites confusion: one person will prefer to transliterate while another may feel that a transliterated term is forced and unnatural.

(ii) The provision of a complete set of translated terms may actually discourage transliteration. The teacher with the glossary in his hand may find it easier and more "nationalistic" to use the translated form rather than to transliterate.

*The system adopted in translating technical terms*

We have already argued that it is desirable in translating technical terms, to derive them from Sanskrit, Pali or other language in order to make the word purposefully latent. This is exactly how most technical terms of international standing are coined, except that the roots used are taken from Greek and Latin. Being latent they are uncoloured by popular association, can be made to stand for something specific, and can be acceptable to all. There are also other advantages when such a procedure is followed; these are illustrated later.

Now let us examine the very first list of terms once more.

| *English* | *derivation* | *Sinhalese* | *derivation* |
|---|---|---|---|
| CARDIAC | Gk. Kardia: heart close to stomach? | කන්තුක | Skt. Kantu: heart |
| COAGULUM | L. Coagulare: to coagulate | ආතංචය | Skt. A—tanci: to coagulate |

| *English* | *derivation* | *Sinhalese* | *derivation* |
|---|---|---|---|
| CORONARY | L. Corona: a crown | කිරීටක | Skt. Kirīṭa: a crown |
| GERM | L. German: to sprout, bud or germ. | ජනකය | Skt. Janaka: generative |
| PARALYSIS | Gk. para: beside lysis: loosen | පරාශ්ලථය | Skt. Para: alongside +ślatha: loosening |
| TETANUS | | ටෙටනස | |
| UVULA | L. Uva: a small grape | කාකලිය | Skt. Kākalī: a kind of grape |

Faraday, in communicating his researches into the effects of passing an electric current through solutions, discarded the word 'pole' and coined 'electrode' from the Greek *elektro*—and *odos*, way. And yet Faraday could give a lecture in popular science in words that a lay audience understood.

(i) The effort at learning such terms becomes minimal when they are built up systematically out of roots or words which have a specific meaning, e.g.

| *Greek or Latin* | *Sanskrit, Pali or Sinhalese* | *Root meaning* |
|---|---|---|
| bio- | ජෛව | life |
| -tomy | ඡේදය | cutting |
| gyne- | නාරී | woman |
| path- | ව්‍යථ | suffering |

Take the word *abduction* which is from the Latin *ab* away, from and *ducare* to lead. The equivalent Sinhalese technical term is අපනයනය which is similarly derived from අප away, නයනය from ni Sanskrit to lead. Thus, abduction is අපනයනය, adduction ආනයනය, circumduction වාක්‍රනයනය, reduction ප්‍රතිනයනය, reproduction ප්‍රතිප්‍රනයනය. The method is therefore *economical.*

In the Glossary there have been exceptions to this rule other than those mentioned earlier. Sometimes it has been possible to give a Sinhalese term for an English technical term without resorting to the coining of a word because an equivalent term has been available which is suitable for use in Sinhalese as in the following examples.

| | |
|---|---|
| Jaundice | කාමලාව |
| Still birth | මූඪගර්භ |
| Strabismus | කේකරය |
| Surgery | ශල්‍යය |
| Tumour | අර්බුදය |

All the above Sinhalese terms come from the medical terminology used by Susruta. Here are a few more examples, the terms this time being borrowed from Raghu-Vira's Comprehensive English-Hindi Dictionary.

| | |
|---|---|
| Artery | ධමනිය |
| Medullary | මජ්ජක |
| Pons | සේතුව |
| Treadmill | චාරපේෂණිය |
| Varicose | අපස්ඵිත |

(ii) It provides a definite connection between the original and the translated word because the roots of both words have one meaning in common. Such a system even if it has no other virtues surely is rational and scientific.

(iii) It ensures that no overlap of terminology occurs. In the absence of such a system, overlap occurs only too frequently and the danger is greatest with productive words. For instance, වර්ත (vṛit.—Skt. to turn) or its derivatives has, in older glossaries, been used in a number of contexts :

| | |
|---|---|
| Adaptation | අනුවර්තනය |
| Metabolism | පරිවෘත්තිය |
| Recurrent | පුනරාවර්ත |
| Reflection | පරාවර්තනය |
| Refractive | වර්තන |
| Relapse | පුනරාවර්තනය |
| -tropic | නිවර්තන |
| Torsion | ව්‍යාවර්තන |
| Reversing | ප්‍රතිවර්තන |
| Rolling (in rolling Friction) | පරිවර්තන |
| Alternating current | ප්‍රත්‍යාවර්තක |
| Diffraction | විවර්තන |
| Refringent | වර්තනකාරී |
| Pivot | විවර්තනිය |
| Harmonious | අනුවර්තී |
| Choke | විවර්තකය |

Examining the above words and rendering those connected with physiology and biochemistry according to the present rules we have :

| *English* | *Sinhalese* | *Connected terms* | *Sinhalese equivalents* |
|---|---|---|---|
| Metabolism | ආරාඛිත්තිය | Anabolism | උක්ඛිත්තිය |
| | | Catabolism | අවක්ඛිත්තිය |
| Recurrent | ප්‍රතිධාරා | Current | ධාරාව |
| Reflection | ප්‍රතිමිංජනය | Reflex | ප්‍රතිමිංජය |
| | | Flexor | මිංජකය |
| Refractive | ප්‍රතිභංගී | Fracture | භග්නය |
| | | Birefringence | ද්විප්‍රතිභංජනය |
| -tropic | නිවර්තන | -tropism | වාර්තනාය |
| Relapse | පුනර්පතනය | | |

Another list of words collected from older glossaries where Skt. Kram —to go—has been used in the following:—

| | |
|---|---|
| Transference | සංක්‍රාමණය |
| Transition | සංක්‍රමණය |
| Infection | සංක්‍රමණය |
| Imigration | සංක්‍රමණය |
| Emigration | නිෂ්ක්‍රමණය |
| Gradient | අනුක්‍රමණය |

This overlap in the older glossaries illustrated above often happens because the glossarian usually deals with lists of unrelated words. The lists are often, for convenience, taken from the index of a text book on the subject the glossary committee is dealing with. It may thus happen that *recurrent* and *relapse* are done on two different days and then it is likely that these words which both contain the idea of something which *recurs* are given the same basic word පුනරාවර්ත, because the glossary committee has gone on the basis of the *meaning* of the original words rather than by their *roots.*

In connection with the last point we should like to draw attention to the position with regard to translating Greek and Latin roots which have an identical meaning. Thus *renal* and *nephro-* both mean *belonging to the kidney*; one is Latin and the other Greek. In translating *renal* and *nephro-* should they be given the same root or different roots ? Since one cannot visualize all the contexts in which these terms may be used, the safer policy

is to give them separate roots. Then *renal* becomes වැක්කිය and *nephro-* වක්ක. In the case of *baro* which is Greek for weight and is generally used as a learned equivalent of *pressure* the need for giving two different roots to *baro* and *pressure* is very clear. If one uses පීඩන as an equivalent for both *baro-* and *pressure*, *barometric pressure* would have to be translated by පීඩන-මාන පීඩනය (cf. baro භාර, baroceptor භාරග්‍රාහය.)

*The last principle which we wish to state is that it is wise to deal with lists of synonyms and connected words rather than with ad hoc lists of unrelated words.* For example, the word *eye* and near synonyms such as *visual*, *oculo-*, *ophthalmic* and *optic* should be done simultaneously rather than in isolation. In fact, not only such basic terms but also their derivatives such as *oculentum*, *oculogyral* and *oculomotor* should be considered at the same time. This method ensures that there is no overlap and shows the need for technical synonyms in Sinhalese, as in the English: any one of such a list of terms cannot be used indiscriminately for another.

We are not unmindful of the possibility that the principles we have generally followed in coining technical terms in Sinhalese may appear to give rise to a "pseudo-Sinhalese jargon". It is well to remember, however, that in any language the scientific technical terminology employed departs widely from the lay language and sometimes even from scientific terminology used up to that time. The languages of the scientifically advanced countries have kept abreast with the advancement of scientific knowledge by continuously introducing new terms as the need arose. Whether *all* the technical terms so introduced are necessary is open to question. Pickering (1961), while admitting that new elements, new concepts, new ideas and the like have to be given new names, remarks that "unfortunately these ears of corn are almost smothered with weeds of unnecessary and imprecise neologisms". On the other hand, Sinhalese has remained comparatively static in the fields of science and technology. This is precisely why we are at the present moment faced with a multitude of English scientific terms for which Sinhalese or Sinhalized words have to be urgently found but for which there have never been any real Sinhalese equivalents. The newly coined Sinhalese technical terms in the Glossary may appear at first to be monstrous—especially to the student of the "pure" Sinhalese but this is simply because of their unfamiliarity. When the medical term "*antibody*" was first encountered by Sir Arthur Quiller-Couch who was then no less a person than the Professor of English Literature at the University of Cambridge, he was provoked to call such a derivation "a barbarism, and a mongrel at that"; and proceeded to state that "the man who uses it debases

the currency of learning". However, with the passage of time not only "*antibody*" but also a whole host of other similarly derived technical words eventually achieved universal acceptance. Incidentally, the passage just preceding Quiller-Couch's outburst against *antibody* reads as follows: "I was waiting, the other day, in the doctor's anteroom, and picked up one of those books ..... I found myself engaged in following the manoeuvres of certain well-meaning bacilli generally described as 'Antibodies'." Roberts (1954) points out the irony of this situation thus: "Observe, however, that in the very first sentence the censorious writer himself uses *anteroom*, a mongrel word if ever there was one—half Latin and half Teutonic." The simple truth of the matter lies in the fact that *antibody* was unfamiliar to Quiller-Couch and he called it names while *anteroom* (which is as bastard a word as *antibody*) was familiar to him and so came to him spontaneously without arousing any emotion as he was used to it.

In conclusion, we would like to state that the above principles and rules were not arbitrarily formulated by the Glossary Committee but were evolved slowly by the Committee out of a real necessity in the course of its work. However, we hope that we have not given the impression that we claim this system to be the final solution to the complex task of compiling a technical glossary in Sinhalese. We would welcome criticisms, suggestions and advice regarding the methods we have illustrated here.

**Summary**

The principles which we found to be desirable to adhere to in assisting the Official Language Department in preparing a glossary of technical terms in Sinhalese in the field of Physiology and Biochemistry were:

1. to avoid generally using loose, common words in translating technical terms.
2. to deal with individual words and not with phrases.
3. to transliterate international terms.
4. to translate technical terms not on the basis of meaning, but on the basis of roots taken from Sanskrit, Pali, latent Sinhalese, etc., and equivalent to the roots of the technical terms in English.

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