the freest drainage will, by hastening resolution, diminish the subsequent fibrous contractures.

It is very desirable that those who are responsible for the treatment during the acute inflammatory phases should also supervise the subsequent treatment by physiotherapeutic means. While few would challenge the value of complete rest to the part during the early acute phase of inflammatory reaction, few would deny the benefits of active movement and of exercise once the florid spreading stage is over and the early dangers are past. Apart from the sloughing of tendons and the involvement of joints which give permanent stiffness, we have the adhesions in tendon sheaths, the fibrosis in the fascial planes between the muscles, the fibrous plaques which form where tissue was destroyed. If the thought of function be kept uppermost in our minds in conducting the treatment in the stages which follow that of the invasive process, we shall never permit the development of the unbreakable barriers to movement which determine crippledom in the neglected case.

The use of active and purposive exercise in restoring useful movement should govern the tedious period which follows that of nursing care. Massage and passive exercise have their place, but active movement, controlled and guided by the patient's will, is the effective element in treatment. If interest and achievement lend their spur to effort, the patient, progressing from one task to another designed to increase the range of certain movements, passes unconsciously from invalidism back to effective work. The workshop now forms an essential part of the equipment of the convalescent institution. Our responsibility for treatment does not end until the maximum of usefulness has been restored.

Summary

1. Acute infections of the hand should be treated in the first instance on conservative lines.
2. In very severe infections three measures may be employed: (a) lymph and venous stasis (Bier); (b) chemotherapy (sulphonamide); (c) passive immunity (antitoxic serum).
3. In certain areas—for example, finger pulp and tendon sheaths—anatomical considerations make early opening desirable.
4. As soon as the early dangers are past, efforts to restore function should begin, and they should end only when the maximum return of function that is possible has been attained.

At the eleventh British Congress of Obstetrics and Gynaecology, which, as already announced in these columns, is to be held at Edinburgh on April 4, 5, and 6, 1939, the chief subject for discussion will be pain in labour and methods of alleviation, to be introduced by Professor Chassar Moir of Oxford and Dr. John Sturrock of Edinburgh. The official guests of the Congress will be Professor Wagner (Berlin) and Dr. Samuel Meaker (Boston). Other communications will deal with genital hypoplasia, dysmenorrhoea, tubal infection, hyperemesis gravidarum, results of pregnancy toxæmia, trichomonas infection, male sterility, habitual abortion, and myometrial activity. A visit will be paid to the Department of Animal Genetics under the direction of Professor F. A. E. Crew. There will be a demonstration of pathological specimens, and those who desire to exhibit pathological material are asked to communicate with the local secretary of the Congress, Dr. Chalmers Fahmy, 7, Chester Street, Edinburgh, 3, from whom other information concerning the Congress may be obtained.

THE CORRECT NAME OF THE MALIGNANT TERTIAN MALARIA PARASITE

BY

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Not only is the malignant tertian malaria parasite referred to under a multiplicity of colloquial names, such as malignant tertian, subtertian, aestivo-autumnal, and "tropica," but even the zoological name of this species is a constant source of difficulty and doubt to those who have occasion to use it. Thus the name now in most general use is *Plasmodium falciparum*, but many authors employ the names *P. praecox* or *P. immaculatum*, claiming that one or other of these is the correct specific designation. Uncertainty also exists as to whether this species should or should not be placed in the genus *Laverania*, and *L. malariae* and *L. falcipara* are names not uncommonly seen. Efforts to apply the rules of zoological nomenclature seem only to have added to the confusion.

The Present Position

Hitherto controversy has chiefly revolved around the question which of the specific names—*praecox*, *immaculatum*, or *falciparum*—has the strongest claim to validity. Before any detailed discussion is entered into it is desirable first to review very briefly the present position in respect to these names. Grassi and Feletti (1890b) gave the name *Haemamoeba praecox* to a parasite found by them in the blood of birds from a certain malarious region in Italy, and also, later in the same paper, to the then newly discovered asexual stages of the parasite of aestivo-autumnal fever in man, believing the two parasites to be identical. Later Grassi and Feletti (1891, 1892) gave the name *relicta* to the same or a similar parasite in the blood of birds. Sergeant *et al.* (1929) consider that, although these authors gave the same name to the avian and the human parasite in the first place, they have by the subsequent naming of *relicta* automatically designated *praecox* as the human parasite, and that therefore the correct name for the latter species is *praecox*. This would be in accordance with a common procedure in zoological nomenclature—that is, where a name at first given has included two closely related species, one of which is subsequently designated by another name, the original name becomes applicable to the remaining species. Other authors (Schaudinn, 1903; Blanchard, 1905; Stiles, 1929) hold that the context in the original description shows that the name *praecox* was definitely given to the bird parasite, and that it must therefore be invalid for the human one, whatever subsequent procedure on the part of the authors may have been. In this case, if *praecox* be invalid for the human parasite, then some other name is required for it. Here again authors differ. Some hold with Schaudinn (1903) that the first valid name is *immaculatum*, used by Grassi and Feletti (1892); others that this name is also invalid and that the proper one for the parasite is *falciparum*, given by Welch (1897). It is pointed out by Blanchard (1905)

* The junior author desires to thank the Royal Society of London and the London School of Hygiene and Tropical Medicine for the financial assistance which has enabled him to continue his work on malaria.

that the name *immaculatum* was used by Grassi (1891), previous to being given to the human parasite, to designate a blood parasite of a bird—the kestrel (*Cherchneis tinunculus*). In this paper Grassi goes on to say, just as was done with *praecox*, that he considers this avian parasite to be the same as the so-called “unpigmented parasite” reported in aestivo-autumnal fever in man, and on these grounds includes it in his list of human parasites. From such a point of view the name *immaculatum* must therefore be rejected for the human parasite for the same reasons as *praecox* was—namely, that the name was pre-occupied by a bird parasite.*

The First Naming by Laveran

None of these arguments appears, however, to have sufficiently taken into account the circumstances relating to the first naming of the malaria parasite by Laveran, and the effect of such considerations upon the validity of the subsequent steps in nomenclature taken by Grassi and Feletti and others. In his book Laveran (1881a) gave the name *Oscillaria malariae* to the entirely new form of parasite discovered by him in the blood of malarial subjects. From the standpoint of zoological nomenclature everything depends on what description accompanied, or was referred to at, this first naming. It is immaterial what subsequent procedure in this respect was adopted by Laveran or any other author. Thus that Laveran later discarded the name *Oscillaria* as unsuitable has no relevance in deciding upon the correct nomenclature of this parasite. Also if the description clearly indicates the malignant tertian parasite and no other, then *malariae* is by right of priority the specific name of the malignant tertian parasite, independently of whether Laveran thought of the malaria parasite at the time as one or more species. Also if this description does so apply, then not only could there in this case be no other name having priority, but in no circumstances whatever should any other specific name (for example, *falciparum*) rightly replace it.†

After a careful examination of the original publications we have convinced ourselves that Laveran's description, given at the time of naming, relates with absolute certainty to the sexual forms of the malignant tertian parasites and to these only, whilst even in somewhat later descriptions (1882–4) no forms which can with certainty be assigned to any other species are included. The various descriptions given by Laveran at this period relate to four types of bodies, regarding which it is possible to say that bodies No. 1 were typical crescents, bodies No. 2 were exflagellating spheroid bodies, and bodies No. 3 “cadaveric forms” of Nos. 1 and 2. It is clear that all these forms were malignant tertian sexual forms. Laveran (1887) says: “A côté des éléments cylindriques en croissant on trouve presque toujours des corps ovales (E, fig. 4) qui paraissent être des formes intermédiaires aux corps sphériques et aux corps en croissant” (loc. cit., p. 270), and, in his book (Laveran, 1881a, p. 97), that “les éléments parasitaires du sang qui sont décrits dans ce travail sous les noms de corps No 1, No 2, et No 3 ne représentent probablement que trois phases du développement d'un seul et même parasite comparable aux oscillariées, vivant à l'état d'agglomération ou d'enkystement pendant une partie de son existence.” Only in regard to bodies No. 4 can there be any doubt as to these not being forms of malignant tertian. These forms

(No. 4) are, however, not mentioned in the description which accompanied the first giving of the name *Oscillaria malariae*. The reference commonly given in literature to such naming is “Laveran, 1881.”

Two papers published in that year in scientific journals (vide Laveran, 1881c, 1881d) do not include any scientific naming of the parasite. Only in Laveran's book (Laveran, 1881a), which we had some trouble to obtain, is the name *Oscillaria malariae* given, as later referred to by Laveran himself and others (Richard, 1882, 1883). The words used are: “S'il était démontré que les filaments mobiles des corps No 2 sont bien réellement de l'espèce oscillariées, le nom d'*Oscillaria malariae* conviendrait bien au nouvel hématozoaire” (loc. cit., p. 87). From this it is evident that the name *Oscillaria malariae* was applied to the microgamete which Laveran believed to be the mature form of the parasite. All the forms described by him in this connexion—namely, bodies Nos. 1, 2, and 3—have been universally accepted by subsequent workers as sexual forms of the malignant tertian parasite. As regards bodies No. 4 (intracorpuseular forms) it is perhaps now impossible to say what species they represent, but it is by no means impossible that these also are forms of the malignant tertian parasite, for Laveran notes that he originally worked especially with material obtained from the organs of patients dead from pernicious fever (Laveran, 1882), and the larger intracellular forms figured by him are compatible with developing crescents or even older schizogonous stages of malignant tertian. No one can say that they are with certainty any other particular species (vide later remarks in this paper *re* the quartan parasite). Laveran then, when naming the parasite, was certainly mainly concerned with, if his descriptions did not entirely relate to, the malignant tertian parasite. He himself, when referring to some doubts as to the subsequent nomenclature, says: “J'ai décrit le premier les hémamibes comme les corps en croissant” (Laveran, 1891; footnote to p. 93).

Grassi and Feletti's Classification

Even, however, if it be not granted that Laveran's description of *malariae* referred to the malignant tertian parasite, this specific name would still hold good, since, as we shall see, at a later date it was clearly designated as this parasite by Grassi and Feletti; for it is laid down that if two or more species have been included in an author's description under a given name (as has been maintained by some workers in regard to Laveran's name, but we believe without justification), and the same or another author later designates (as we shall show was done by Grassi and Feletti when they recognized the name *Laverania malariae* as pertaining to the forms seen by Laveran) one of these species as that to which such name applies, then this name for the designated species is valid, unless invalid on other grounds.

With such evidence as we have indicated above, we think that in ordinary zoological procedure Laveran's designation of the malignant tertian parasite as *malariae* would have been accepted unreservedly. Why, then, should subsequent authors maintain that Laveran described only the malaria parasite “in general” or the quartan in particular (vide the usual textbook statements)? It seems clear that this was done *not* on the merits of Laveran's description but in order to clear up difficulties in nomenclature subsequently created.

The clue to the confusion is to be sought in the names given to the parasites in the years 1890–2, when Marchiafava, Celli, Bignami, Grassi, Feletti, and other famous workers in the field of early malaria research made their pioneer observations. It is because it is difficult, looking back, to realize what the facts appeared like to these observers that we must be careful not to make unwarranted deductions based upon our present knowledge of these parasites.

* Workers using the name *immaculatum* for the human parasite usually refer to it as *Plasmodium immaculatum* (Gr. & Fel., 1892), whereas it should be *P. immaculatum* (Grassi, 1891), if this name is to be used at all.

† Vide Article No. 25 of the Rules of Zoological Nomenclature, which reads as follows: “The valid name of a genus or species can only be that name under which it was first designated, on the condition: (a) that this name was published and accompanied by an indication, or a definition, or a description; and (b) that the author has applied the principles of binary nomenclature.” For ease of reference to these rules the reader should consult Wenyon (1926) (p. 1336).

In 1890 Feletti and Grassi, from observations on the parasites of birds from healthy and malarious localities, and as a result of what was then known about the human malaria parasites, came to the conclusion that there were two kinds of these parasites—namely: (1) those resembling amoebae, which they called *Haemamoeba malariae* and which in man gave rise to the regular fevers (quartan and tertian); and (2) others of a peculiar morphology and character, as described by Laveran, which they called *Laverania malariae* and which they considered to be the cause of the irregular fevers. In the same year Grassi and Feletti (1890b), in a remarkable appendix added to the French transcript of an original paper in Italian (Grassi and Feletti, 1890a), (i) gave names to the two species of parasite (included in *Haemamoeba malariae* Feletti and Grassi, 1890) as shortly before differentiated but not named specifically by Golgi (1889)—that is, *H. malariae* (of quartan fever) and *H. vivax* (of tertian fever)—and (ii) added a third species, *H. praecox* (of quotidian fevers).^{*} In the following year Grassi (1891) named yet another species, *H. immaculata*, also a parasite of the quotidian fevers. These last two species (*praecox* and *immaculata*), in so far as they can be held to apply to the human parasites, related to the asexual forms of the malignant tertian parasite of which Laveran had already described and named the sexual stages, though at that time this relationship was unknown to Grassi and Feletti. We have, then, in 1892 five names assigned to the malaria parasites of man, as set out by Grassi and Feletti (1892):

Laverania malariae. (The sexual forms of the parasite of malignant tertian malaria.)†

Haemamoeba malariae Grassi & Feletti. (The parasite of quartan malaria.)†

Haemamoeba vivax Grassi & Feletti. (The parasite of benign tertian malaria.)†

Haemamoeba praecox Grassi & Feletti. (Name applied to a parasite of birds and also to the asexual forms of the malignant tertian parasite.)†

Haemamoeba immaculata Grassi & Feletti. (Name applied to a parasite of birds and also to the asexual forms of a supposedly special type of the malignant tertian parasite.)†

Of these specific names the first stands, for we have shown that it was clearly given by Laveran to the sexual forms of the malignant tertian parasite and that there could be no question of any previous name. *H. vivax* remains valid for the so-called benign tertian parasite. *H. malariae* Gr. & Fel. (nec *H. malariae* Laveran) would also be valid to this day as applied to the quartan parasite, provided *Laverania* and *Haemamoeba* (= *Plasmodium*) are retained as two separate genera.

Classification in One Genus

At the present time probably very few authorities would support *Laverania* as a genus desirable on morphological grounds. Both Schaudinn (1903) and Blanchard (1905) thought that Grassi and Feletti were not justified in separating the genus *Laverania* from the genus *Haemamoeba* (= *Plasmodium*), and considered that all the human malaria parasites should be included in one genus—*Plasmodium*. This is the common usage at present. Schaudinn (1903) and Blanchard (1905) state that when *L. malariae* is absorbed in the genus *Plasmodium* the specific name *malariae* lapses for the malignant tertian parasite, because there is already a *malariae* (the quartan parasite) in the latter genus. This is an incorrect procedure, for it is the more recent specific name (that is, *malariae* for the quartan parasite) which should lapse in conformity with Article No. 35 of the Rules of Zoological Nomenclature, which reads as follows:

^{*} Later in the same year a similar classification was republished by these authors (Grassi and Feletti, 1890c).

† The remarks in parentheses are ours.

“When, in consequence of the union of two genera, two different animals having the same specific or subspecific name are brought into one genus, the more recent specific or subspecific name is rejected as a homonym.”

It is clear, therefore, that when one genus only is recognized for the human malaria parasites, the two names—*P. malariae* (Laveran) for the malignant tertian parasite and *P. malariae* (Gr. & Fel.) for the quartan one—cannot both be retained. In such a case, then, *P. malariae* (Gr. & Fel.), as applied to the quartan parasite, must sink as a synonym.

It is very interesting to note that Grassi and Feletti (1890b, 1890c, 1892) were perfectly correct in their procedure in giving their own name, *malariae*, to a parasite in what they considered to be another genus than that which contained Laveran's *malariae*, and that any error in this matter was one on the part of subsequent authors, who thought the name *malariae* Gr. & Fel. should obviously be *malariae* Laveran. It is a curious error, and one which has given rise to the erroneous solution of the puzzle in nomenclature by which the facts are squared only through maintaining that Laveran gave the name *malariae* to the malaria parasite “in general.” Such a solution ignores the fact that *Haemamoeba malariae* Gr. & Fel. is a perfectly correct name so long as *Laverania* is maintained as a genus distinct from *Haemamoeba* (= *Plasmodium*). This error also logically demands the assigning to Laveran of the name of a species (the quartan parasite) which it is problematical he had seen at the time he gave the name *Oscillaria malariae*, and which he certainly did not then describe in such a way that it can be asserted that it was included in his original description of the malaria parasite.*

When, therefore, Grassi and Feletti recognized *Laverania malariae* as Laveran's species and erected two other species—*Haemamoeba malariae* Gr. & Fel. and *Haemamoeba vivax* Gr. & Fel.—they clearly designated (even if it be considered that Laveran had not already done so) the malignant tertian parasite as Laveran's species—that is, as the *malariae* which carries priority in any genus in which it may be placed.

We have endeavoured to ascertain at what period the specific name of the quartan parasite was changed from *malariae* (Gr. & Fel.) to *malariae* (Laveran), the former being perfectly correct so long as two genera are recognized, the latter totally erroneous whatever generic divisions be adopted. This error appears to have arisen about 1900, when Lühe (1900) speaks of the quartan parasite as “*Plasmodium malariae* (Laveran) s.str.” In his classification of the malaria parasites a similar nomenclature is used by Schaudinn (1902), who designated under the name *Plasmodium malariae* (Laveran) the quartan parasite as the type species of the genus *Plasmodium*. Before this date we have been unable to find the name

* Some workers appear to believe that the parasite first observed and named by Laveran was the quartan one. There is no doubt that this author (Laveran, 1891) figured and referred to certain parasitic forms (“bodies No. 4”) from a case of quartan fever which strongly suggest segmenting forms of this plasmodium. He goes on to say, however, that such bodies were seldom seen by him, and assigns to them a very secondary place. He also states that these forms were seen in the blood of a case studied by him in September, 1881, and the protocols of his cases suggest that the exact date was September 17 (vide Case No. XXXIV, loc. cit.). We can find no mention of such forms in the book that contains his original definition of *Oscillaria malariae* (Laveran, 1881a), which book he presented to the Académie de Médecine on May 3, 1881, apparently before he encountered the quartan-like forms depicted by him. It seems very improbable, therefore, that this author had noted such forms when he gave the name *O. malariae* to the parasites discovered by him. Such a conclusion is strengthened by the fact that in his paper of October 24, 1881 (Laveran, 1881c), he speaks of bodies No. 4 for the first time. From a very careful study of his early works we have been unable to find any description of parasites which are clearly recognizable as quartan, either before or at the time when he first used the name *O. malariae*. We can therefore discover no foundation for the belief that the parasite first observed and described by Laveran was the quartan one.

malariae, as used for the quartan parasite, attributed to any other authors than Grassi and Feletti, whilst after this date the name *malariae* (Laveran) appears to have been generally adopted by workers in most countries (vide Stiles and Hassall, 1925; Wenyon, 1926; Doflein, 1929; Muhlens, 1931; Brumpt, 1936). Although Opinion No. 104 of the International Commission on Zoological Nomenclature (1928) gives *malariae* (the quartan parasite) as the type species of the genus *Plasmodium*, no author is quoted.

It follows, if *P. malariae* (Gr. & Fel.) cannot be used correctly for the quartan parasite, when only one genus is recognized, that the correct name of this parasite must be the next valid name given to it. Unfortunately Golgi (1889), who actually differentiated the quartan and the benign tertian parasites on their morphological characters, did not give these any other names than "parassiti malarici nella febbre quartana" and "parassiti malarici nella febbre terzana," which designations are not in Linnaean form and therefore are not valid in scientific nomenclature. The first authors to employ a correct Linnaean nomenclature for the quartan parasite seem to have been Celli and Sanfelice (1891), who used the name *Plasmodium malariae* var. *quartanae* for this species. We believe no objection can possibly be raised against the name *quartanae* as given in Linnaean form by these authors.* The correct specific name (*de jure*) for the quartan parasite appears, therefore, to be *quartanae* Celli and Sanfelice, 1891.

The Genus *Oscillaria*

It is still necessary to consider the validity of Laveran's genus *Oscillaria*. It is generally accepted that this name is invalid because preoccupied by *Oscillaria* Schrank, 1823, given to a genus of algae. If this were the only ground of objection there could be no question that Laveran's name, being given to an animal, could not strictly be counted as preoccupied by a genus of the vegetable kingdom, though it is held undesirable to have the same name for two genera among the Protista. Actually it is certain from the context that Laveran in this case did not propose a new genus, but placed his parasite in that class of lowly organisms which at the time seemed to him most appropriate, this being Schrank's genus *Oscillaria*, which was erected for certain algae characterized by their peculiar animal-like movements. Even then, however, if one follows Article No. 1 of the Rules of Zoological Nomenclature, which reads thus:

"Zoological nomenclature is independent of botanical nomenclature in the sense that the name of an animal is not to be rejected simply because it is identical with the name of a plant. If, however, an organism is transferred from the vegetable to the animal kingdom its botanical names are to be accepted in zoological nomenclature with their original botanical status, and if an organism is transferred from the animal to the vegetable kingdom its names retain their zoological status."

it is difficult to see that Laveran's genus *Oscillaria* could rightly be considered invalid—in which case it would take precedence over *Plasmodium* Marchiafava and Celli, 1885. It is sometimes argued that the name *Oscillaria* is invalid because it was afterwards rejected by Laveran on account of inappropriateness; but, once given, even the author himself cannot reject a name for this reason (vide Article No. 32 of the Rules of Zoological Nomenclature).

It is not the intention of this paper to suggest that the names of the malaria parasites should be changed in accordance with the above findings. Such changes would now cause almost intolerable confusion. Fortunately they would not even be correct, for zoologists have agreed that

* Article No. 12 of the Rules of Zoological Nomenclature reads: "A specific name becomes a subspecific name when the species so named becomes a subspecies, and vice versa."

where a formal decision upon a name has been given by the International Commission on Zoological Nomenclature the name so fixed is the correct one for usage independent of all other considerations. Such a decision is given in Opinion No. 104 of this Commission (1928), which reads as follows:

"*Laverania* Grassi and Feletti, 1890a, 60, mt. *malariae* (homonym) so. *falcipara* Welch, 1897, 36, 47, type host *Homo*. (For authors who consider the parasite of aestivo-autumnal malaria generically distinct from that of quartan fever.)* Not *Laverania* Labbé, 1899a, 82, type *ranarum*, type host *Rana esculenta*."

"*Plasmodium* Marchiafava and Celli, 1885d, 791, mt., tsd. *malariae* (as restricted to quartan fever), type host *Homo*."

This decision does not prevent the sinking of *Laverania* Gr. & Fel., 1890* in *Plasmodium* March. & Celli, 1885, on zoological grounds unconnected with terminology. It does, however, clearly rule out *Oscillaria* Laveran, 1881, and also, arbitrarily and possibly wrongly but none the less authoritatively, all such questions of *de jure* nomenclature as have been discussed above. Nevertheless it ought to be pointed out that (1) *apart from* the malignant tertian parasite, there is in our opinion no description corresponding to *malariae* Laveran, 1881, and (2) the type species of the genus *Plasmodium* as recorded by Schaudinn (1903), by Blanchard (1905), by Stiles and Hassall (1925), and other authorities, is the quartan parasite, which has been given by them under the above *nomen nudum*.

Conclusion

Our object, then, in writing this note is to show how impossible at present would be the use of the correct names *de jure*, and the desirability of conforming to the agreed-upon convention of accepting names formally decided upon by the International Commission. The only loophole here would appear to be the possibility that, in the Opinion quoted, it is the generic names which are being fixed and that the validity of the decision does not extend to the specific designations given for the genotypes. This, however, would appear to be an objection overruled by the obvious need for uniformity and the opportunity of arriving at such uniformity on a reasonable basis given by the existing ruling. The only alternative would be a renewed application to the Commission (which perhaps is scarcely necessary, since usage in the main is now in accordance with what it would be desirable to recommend), that the names now most commonly used—that is, *P. falciparum* (Welch, 1897), *P. malariae* (Gr. & Fel., 1890), and *P. vivax* (Gr. & Fel., 1890)—be fixed by still more definite authority, the changes involved in a return to the strict *de jure* naming being too great a price to pay for theoretical correctness.

For the sake of clarity we append what we consider to be the nomenclature *de jure* and *de facto* of the three classical species, as this would be (a) if only one genus of malaria parasites be recognized, and (b) if a separate genus be used to include the malignant tertian parasite only.

* The usual authority given for the genus *Laverania* is Grassi and Feletti (1890). The first paper published by these workers in that year appears to be dated March 23 (Grassi and Feletti, 1890a), and in it they refer to the genus "*Laverania nobis*." The term *Laverania* is used, however, previously to this by Feletti and Grassi (1890), whose paper is reprinted from *La Riforma Medica* of January 15. The latter designation of the genus *Laverania* would therefore have precedence over that of Grassi and Feletti (1890a), so that according to this the genus should be *Laverania* Feletti and Grassi, 1890. On the other hand, Blanchard (1905) (p. 443 and footnote on p. 449) gives the first reference to the genus *Laverania* as follows: "R. Feletti et B. Grassi. *Sui parassiti della malaria*; 8° de 11 p., 22 déc. 1889.—La brochure est datée du 22 décembre, mais n'a été remise à la poste que le 30 décembre" ("distribuée le 30 décembre"). We have not been able to consult this pamphlet, but it would seem from this that the earliest authority for the genus *Laverania* is not Grassi and Feletti, 1890, but Feletti and Grassi, 1889.

(A) Nomenclature De Jure

Fever	If Only One Genus of Parasites	If Two Genera of Parasites
Benign tertian	<i>Oscillaria</i> * <i>vivax</i> (Gr. & Fel., 1890)	<i>Plasmodium</i> <i>vivax</i> (Gr. & Fel., 1890)
Quartan	<i>Oscillaria</i> * <i>quartana</i> (Celli & Sanfelice, 1891)	<i>Plasmodium</i> <i>quartanum</i> (Celli & Sanfelice, 1891)
Malignant tertian	<i>Oscillaria</i> * <i>malariae</i> Laveran, 1881	<i>Oscillaria</i> † <i>malariae</i> Laveran, 1881*

(B) Nomenclature De Facto

Fever	If Only One Genus of Parasites	If Two Genera of Parasites
Benign tertian	<i>Plasmodium</i> <i>vivax</i> (Gr. & Fel., 1890)	<i>Plasmodium</i> <i>vivax</i> (Gr. & Fel., 1890)
Quartan	<i>Plasmodium</i> <i>malariae</i> (Gr. & Fel., 1890)†	<i>Plasmodium</i> <i>malariae</i> (Gr. & Fel., 1890)†
Malignant tertian	<i>Plasmodium</i> <i>falciparum</i> (Welch, 1897)	<i>Laverania</i> <i>falcipara</i> (Welch, 1897)

* Unless the Recommendation to Article No. 1 of the Rules of Zoological Nomenclature, that it is undesirable to have two genera of the same name in the zoological and botanical kingdoms, is to be regarded as a strict rule, which status it does not appear to possess. In that case the generic name here would be *Plasmodium*.

† Similarly, if the Recommendation to Article No. 1 is to be regarded as a strict rule the generic name here would be *Laverania*.

‡ In Ruling No. 104 of the International Commission on Zoological Nomenclature (1928) no author's name is given for the specific name of this parasite. As discussed in the text, we consider that this entitles us to use *P. malariae* (Gr. & Fel., 1890), not *P. malariae* (Laveran, 1881) as so commonly employed in recent years.

In short, Laveran gave the name *malariae*, not to all species of malaria parasite "in general," but to the malignant tertian parasite, which name this parasite should have rightly retained. Grassi and Feletti did not ascribe Laveran's name *malariae* to the quartan parasite, but gave their own name *malariae* (in the genus *Haemamoeba*), which name, however, sinks when one genus only is accepted to include both forms. The names *praecox*, *immaculatum*, and *falciparum* are all synonyms in so far as they are applied to malaria parasites of man. Acceptance of Opinion 104 of the International Commission on Zoological Nomenclature offers, however, a means, based on authority, of establishing the present most commonly used names of the parasites and so avoiding the confusion which would undoubtedly arise from any attempt now to allocate correct names *de jure* to these parasites. Hence the most desirable names for general adoption are *P. falciparum* (the malignant tertian parasite), *P. malariae* (the quartan parasite), and *P. vivax* (the benign tertian parasite).

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MANAGEMENT OF TRIAL LABOUR AND
SELECTION OF CASES

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The Justification for Trial Labour

"Any measure which will reduce interference in labour, including induction and Caesarean section, and will increase the number of spontaneous labours, will contribute largely to the reduction of maternal mortality." These words of Bourne (1934), separated from their context, express concisely the prime reason for the introduction of the procedure known as trial labour. It is to be regretted that this test has lately fallen somewhat into disrepute in certain areas, chiefly, in my opinion, owing to improper selection of cases and to incorrect management of labour.

It is primarily intended for those cases complicated by a moderate degree of disproportion in which it is considered that, if the patient will co-operate, the normal mechanism of labour is not disordered, and the uterine action is satisfactory, vaginal delivery will take place without serious damage to mother or child. It should never be regarded as a test of endurance of the mother in the hope "that the skull will collapse before the uterus gives out" (Walker, 1936). It has been pointed out by Brown (1935) that, in spite of an enormous increase in the number of patients treated by Caesarean section and by the induction of premature labour during the last twenty or thirty years, the percentage of cases of difficult labour has not diminished. The simple fact that it is impossible to foretell how the uterus will act during labour introduces that element of doubt which justifies the employment of trial labour in carefully selected cases in preference to operative procedures.

Cook (1934) states the case for trial labour in the following terms: "Let us take ten cases of potential disproportion, in any of which obstructed labour may result. Before labour has been in progress we are unable in doubtful cases to determine those in which spontaneous delivery will eventuate. And it is well to admit this. Let us say, as a matter of experience, that spontaneous delivery will occur in nine out of the ten doubtful cases