

PROCEEDINGS OF THE NUTRITION SOCIETY

DIRECTIONS TO CONTRIBUTORS

The Nutrition Society will publish in its *Proceedings* papers presented by invitation at symposia of the Society and abstracts of original communications presented at other meetings.

Invitations to read papers at symposia are issued on the understanding that the persons invited send their papers for publication in the *Proceedings of The Nutrition Society* in the way outlined in the letter of invitation, at least a fortnight before the meeting, and that the papers will not be published elsewhere in the same form, in English or any other language, without the consent of the Chairman of the Editorial Board.

Original communications presented at other meetings of the Society will be recorded in the *Proceedings* by means of an abstract not exceeding 400 words or the equivalent space in print. These abstracts should be submitted as stated in notices calling such meetings. The style of references, abbreviations, symbols and illustrations should be that of the *Proceedings of The Nutrition Society*.

General. Contributors who reside outside Europe are requested to nominate somebody in Great Britain willing to correct their proofs. They will receive by air mail an additional proof (but not the typescript) together with an order form for separates.

Authors' names should be given without titles or degrees. Women are requested to give one Christian name in full to avoid confusion. The name and address of the laboratory or institution from which the paper is published should be given. Any necessary descriptive material about the author should appear in parentheses after the author's name, or at the end of the paper, and not in the form of a footnote. Typescripts should carry the name and address of the person to whom the proof of the paper is to be sent.

Form of Papers Submitted for Publication. The onus of preparing a paper in a form suitable for sending to press lies in the first place with the author. Authors should consult a current issue in order to make themselves familiar with the practice of the *Proceedings of The Nutrition Society* as to typographical and other conventions, use of cross-headings, lay-out of tables, etc.

Papers should be in double-spaced typing on one side of sheets of uniform size with large margins. They should be written in English, the spelling being that of the *Oxford English Dictionary*.

References. References should be given in the text thus: Barnett & Robinson (1942), (Culbertson & Thomas, 1933); where a paper to be cited has more than two authors, the names of all the authors should be given when reference is first made, e.g. (Osborne, Mendel & Ferry, 1919); subsequent citations should appear thus (Osborne *et al.* 1919). When more than one paper by the same authors has appeared in one year the reference should be given as follows: Osborne & Mendel (1914*a*); Osborne & Mendel (1914*b*); or Osborne & Mendel (1914*a,b*); Osborne & Mendel, 1914*a*, 1916; Barnett & Robinson, 1942). Where the lists of authors of two papers appearing in the same year begin with the same name but differ subsequently, references after the first full reference should include sufficient names to differentiate between the two papers, e.g. Thomas, Smith *et al.* (1960) or Thomas, Wilson *et al.* (1960). At the end of the paper references should be given in alphabetical order according to the name of the first author of the publication quoted, names with prefixes being entered under the prefix, and should include the author's initials; the title of the paper should not be included. Titles of journals should be abbreviated as in the *World List of Scientific*

Periodicals (1963-5): 4th ed. London: Butterworths. Examples of such abbreviations will be found in the current numbers of the *Proceedings of The Nutrition Society*. References to books and monographs should include the town of publication and the name of the publisher, as well as the date of publication and the number of the edition to which reference is made. Thus:

Ahrens, E. H. Jr, Hirsh, J., Insull, W. Jr & Peterson, M. L. (1958). In *Chemistry of Lipids as Related to Atherosclerosis*, p. 222. [I. H. Page, editor.] Springfield, Ill.: C. C. Thomas.

Barnett, J. W. & Robinson, F. A. (1942). *Biochem. J.* **36**, 364.

Culbertson, C. C. & Thomas, B. H. (1934). *Rep. Ia agric. Exp. Stn* 1933-4, p. 51.

Doisy, E. A., Somogyi, M. & Shaffer, P. A. (1923). *J. biol. Chem.* **55**, xxxi.

Fairey, N. H. (1938). *Nature, Lond.* **142**, 1156.

Hennessy, D. J. (1941). *Ind. Engng Chem. analyt Edn* **13**, 216.

King, H. (1941). *J. chem. Soc.* p. 338.

Osborne, T. B. & Mendel, L. B. (1914*a*). *J. biol. Chem.* **17**, 325.

Osborne, T. B. & Mendel, L. B. (1914*b*). *J. biol. Chem.* **18**, 1.

Osborne, T. B. & Mendel, L. B. (1916). *Biochem. J.* **10**, 534.

Osborne, T. B., Mendel, L. B. & Ferry, E. L. (1919). *J. biol. Chem.* **37**, 233.

Starling, E. H. (1915). *Principles of Human Physiology*, 2nd ed. London: J. and A. Churchill.

Units. Results should be presented in metric units according to the *Système International Unités* (see *Metrication in Scientific Journals*: Royal Society, 1968). Energy measurements should be expressed in joules or calories, but important mean values should be given in both units, the second being added in parentheses (4·184 J=1 cal).

Time should be given according to the 24 h clock.

Statistical Treatment of Results. In general it is not necessary to publish all the individual results of replicated tests. A statement of the number, their mean value and some appropriate measure of their variability is usually sufficient.

The methods of analysis followed should be indicated, but statistical details, such as tables of analysis of variance, should be given only if they are relevant to the discussion. A statement that the difference between the means for two groups of values is statistically

significant should include an indication of the level of significance attained. Where means are quoted, normally the measure of variation most appropriate is the standard error of the mean; occasionally, as for instance where there is specific interest in the distribution of the individual values in the sample on which the mean is based, the standard deviation may be more appropriate. The measure adopted must be clearly stated in the text and in each table. Where the measure of variation is presented as a separate column \pm need not be repeated before each value.

Illustrations. As a rule illustrations should be about twice the size of the finished block, each on a separate sheet, not larger overall than the sheets on which the paper itself is typed, and packed flat. Legends should be typed on a separate sheet and numbered correspondingly with the relevant illustrations. Each illustration, with its legend, should be comprehensible without reference to the text. The approximate position of each should be given in the text.

Diagrams and line drawings, which must all be originals, should be drawn in indian ink on Bristol board or on cartridge, tracing or faintly blue-lined paper. For general guidance in preparing diagrams, it is suggested that for a figure measuring 9 in \times 6 in all lines, axes and curves should have a thickness of 0.4 mm. In curves presenting experimental results the determined points should be clearly shown, the symbols used being, in order of preference, \circ , \bullet , Δ , \blacktriangle , \square , \blacksquare , \times , $+$. For a 9 in \times 6 in figure, the diameter of the circles, the vertical height of the squares and equilateral triangles and the span of the crosses should be 1/8 in. Curves and symbols should be drawn with a mechanical aid and not freehand, and should not extend beyond the experimental points. Scale marks on the axes should be on the inner side of each axis, 1/8 in long, and should extend beyond the last experimental point. For plates, glossy photographs are required and clips should not be used.

A flyleaf of tracing paper should be firmly attached to each illustration. On it should be written in ink: (a) the title of the paper and names of the authors; (b) the figure or plate number; (c) the figures and lettering which are to appear on the finished block, in their correct positions relative to the illustration.

The size of photomicrographs may have to be altered in printing. To avoid mistakes the magnification will be shown by a scale on the photograph itself, e.g. thus $\frac{1}{\mu\text{m}}$. The scale with the appropriate unit should be drawn by the author on the flyleaf and will be inserted by the Press.

Tables. Tables should carry headings describing their content and should be comprehensible without reference to the text. The dimensions of the values, e.g. g/100 ml, should be given at the top of each column and not repeated on each line of the table. Tables should not normally be included in the body of the text, but should be typed on separate sheets. Their approximate position in the text should be indicated.

Chemical Formulas. These should be written as far as possible on a single horizontal line. With inorganic substances, formulas may be used at the discretion of

the editors. With salts it must be stated whether or not the anhydrous material is used, e.g. anhydrous CuSO_4 , or which of the different crystalline forms is indicated, e.g. $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$, $\text{CuSO}_4 \cdot \text{H}_2\text{O}$.

Description of Solutions. Solutions of common acids, bases and salts are preferably defined in terms of normality (N) or molarity (M), e.g. N-HCl; 0.1 M- NaH_2PO_4 . The term '%' must be used in its correct sense, i.e. g/100 g of solution. 10% HCl means 10 g of hydrogen chloride in 100 g of aqueous solution, and should never be used to indicate a tenfold dilution of laboratory concentrated hydrochloric acid. For 'per cent by volume', i.e. ml/100 ml, the term '% (v/v)' may be used. To indicate that a given weight of substance is contained in 100 ml of solution, the term '% (w/v)' may be used.

Nomenclature of Vitamins. The following names have been adopted by the IUPAC Commission of Nomenclature of Biological Chemistry, have been published in *Handbook for Chemical Society Authors* (Special Publication no. 14, 1961, 2nd ed., p. 200. London: The Chemical Society) and, as amended in *J. chem. Soc.* 1962, p. 5312, are accepted by the Editors of the *Proceedings of The Nutrition Society*.

Fat-soluble vitamins:

Present name	Name adopted
Vitamin A ₁ or axerophthol	Retinol
Retinene	Retinal
Vitamin A acid	Retinoic acid
Vitamin A ₂	3-Dehydroretinol or dehydroretinol
Retinene 2	3-Dehydroretinal or dehydroretinal
Vitamin D ₂ or calciferol	Ergocalciferol
Vitamin D ₃	Cholecalciferol
Other D vitamins derived from 7-dehydro-steroids	To be named analogously, as above
Vitamins E	α -, β -, γ -...tocopherol
Vitamin K	

When 2-methyl-3-phytyl-1,4-naphthaquinone [vitamin K₁] is designated by a trivial name, that name shall be phyloquinone.

Vitamins of the K₂ series should be designated as menaquinones-*n* (abbreviated where necessary to MK-*n*), where *n* is the number of isoprene units in the side-chain. Thus vitamin K₂ (35) would be menaquinone-7. The nomenclature for other naturally occurring quinones (ubiquinones, plastoquinones and tocopherol-quinones) and related substances should follow the Tentative Rules of the IUPAC-IUB Commission on Biochemical Nomenclature (see *Biochem. J.*, 1967, 102, 14).

When 2-methyl-1,4-naphthaquinone (MK-0) is designated by a trivial name it may be called menaphthone.

Water-soluble vitamins:

Present name	Name adopted
Vitamin B ₁ , aneurin or thiamine	Thiamine
Vitamin B ₂ or riboflavin	Riboflavin
Vitamin PP, niacinamide or nicotinamide	Nicotinamide*

*The Editors of the *Proceedings of The Nutrition Society* propose always to use the name nicotinic acid and not niacin.

Vitamins B₁₂ (collectively)
Vitamin B₁₂ (pure substance)
Vitamin B_{12b}
Vitamin B_{12c}
Vitamin C or ascorbic acid
Inositol
Vitamin B₆

Cobalamint
Cyanocobalamin
Hydroxocobalamin
Nitritocobalamin
Ascorbic acid
Meso-inositol
The term pyridoxine may be used as a group name to designate the naturally occurring pyridine derivatives with vitamin B₆ activity. 3-hydroxy-4,5-dihydroxymethyl-2-methylpyridine (hitherto called pyridoxine) shall now be called pyridoxol. The 4-CHO and 4-CHNH₂ derivatives shall be named pyridoxal and pyridoxamine respectively.

Folic acids

The term folic acid may be used as a group name to designate the naturally occurring pteroylglutamic acids. The pure substance hitherto known as folic acid, folacin or vitamin B₉ shall be named pteroylmonoglutamic acid. Compounds analogous to pteroylmonoglutamic acid but containing several glutamic acid residues united by amide linkages may be named pteroyltriglutamic acid, pteroylheptaglutamic acid, etc.

In addition, the Editors of the *Proceedings of The Nutrition Society* wish to retain the old more comprehensive names vitamin A, vitamin D, vitamin E, vitamin K, vitamin B₁, vitamin B₁₂ and vitamin C to cover the biological activity when more than one active substance is or may be concerned.

The names pantothenic acid, biotin, *p*-aminobenzoic acid and choline remain unchanged.

Nomenclature of Fatty Acids. In the description of results obtained for the analysis of fatty acids by conventional gas-liquid chromatography, the shorthand designation proposed by Farquhar, J. W., Insull, W., Rosen, P., Stoffel, W. & Ahrens, E. H. (*Nutrition Reviews*, 1959, 17, supplement) for individual fatty acids should be used in the text, tables and figures. Thus 18:1 should be used to represent a fatty acid with 18 carbon atoms and 1 double bond; if the position and configura-

tion of the double bond is unknown, this fatty acid should not be referred to as oleic acid. The shorthand designation should also be used in the synopsis but sentences should be constructed so that it is clear to the non-specialist reader that 18:1 refers to a fatty acid; for example, '... resulted in an increase in the concentration of the fatty acid 18:1 in the liver triglycerides...'. If the positions and configurations of the double bonds are known, and these are important to the discussion, then a fatty acid such as linoleic acid may be referred to as 18:2 Δ 9-*cis*,12-*cis* (positions of double bonds related to the α -carbon atom). However, when essential and related fatty acids derived from animal tissues are being considered, it is preferable to refer to fatty acids such as linoleic acid as 18:2 ω 6 and arachidonic acid as 20:4 ω 6 (position of double bonds related to the ω -carbon atom); it is assumed that the double bonds are methylene-interrupted and are of the *cis*-configuration (see Holman, R.T. in *Progress in the Chemistry of Fats and Other Lipids*, 1966, vol. 9, part 1, page 3. Oxford: Pergamon Press). Groups of fatty acids that have a common chain length but vary in their double bond content or double bond position should be referred to, for example, as C₂₀ fatty acids or C₂₀ polyunsaturated fatty acids. Impure samples of fatty acids such as those used in the preparation of diets should be referred to, for example, as 'linoleic acid'.

Nomenclature of Enzymes. The nomenclature should be that of the Recommendations of the Commission on Enzymes of the International Union of Biochemistry, 1964 (*Comprehensive Biochemistry*, Vol. 13, *Enzyme Nomenclature*, 2nd ed., 1965 [M. Florkin and E. H. Stotz, editors]: London: Elsevier Publishing Co. Ltd).

Nomenclature of Micro-organisms. Bacteria. Scientific names of bacteria should be binominals, the generic name only with a capital, and should be underlined once (for *italic*) in the typescript. Names for new species of genera, or new combinations of generic and specific names, should be formed in accordance with the International Bacteriological Code published in *J. Bact.* 1948, 55, 287, and (in 1949) in *Int. Congr. Microbiol.* iv (1948), *Copenhagen*, p. 587. Wherever possible the names of recognized species should be those used in Topley & Wilson's *Principles of Bacteriology and Immunity* (1955: 4th ed. London: Edward Arnold and Co.). However, where authors wish for good reasons to use some other name (e.g. one used in Bergey's *Manual of Determinative Bacteriology*, 1957: 7th ed. London: Baillière, Tindall and Cox), the Topley & Wilson name should be inserted in parentheses at the first citation thus: *Serratia marcescens* (*Chromobacterium prodigiosum*).

A name must be given in full at the first mention in a paper; in subsequent mention the generic name may be abbreviated, but the abbreviations must be unambiguous. Single letter abbreviations should, in general, be avoided (thus: *Staph. aureus*, *Strep. pyogenes*, not *S. aureus*, *S. pyogenes*). When the generic name is used to define a group it should have a capital but should not be italicized; trivial names, or generic names used as adjectives, should not have capitals or be italicized. Examples of 'trivial names' are: staphylococci, streptococci, and meningococci or meningococcus (generic name is *Neisseria*). *Staphylococcus* and *Streptococcus* are generic names

†The full definitive rules of nomenclature of vitamin B₁₂ and the other corrinoids will be found in *Vitamin B₁₂ und Intrinsic Faktor. 2. Europäisches Symposium Hamburg 1961* (H. C. Heinrich, editor. 1962, p. 764. Stuttgart: Ferdinand Enke Verlag) and *J. Am. chem. Soc.* 1960, 82, 5581.

and the following passage illustrates the correct usage. 'This investigation is concerned with *Salmonella enteritidis*, because this *Salmonella* is important as a cause of disease in man and, because of experimental salmonella infections in the mouse, it is the most easily controlled. Tests with staphylococci, including *Staph. aureus*, have not contributed to the understanding of susceptibility to staphylococcal infection.'

Microfungi should be designated as in Ainsworth & Bisby's *A dictionary of the Fungi* (1954: 4th ed. Kew: Commonwealth Mycological Institute).

Other Nomenclature, Symbols and Abbreviations.

Authors should follow current numbers of the *Proceedings of The Nutrition Society* in this connexion. The chemical nomenclature adopted is that of the Chemical Society (see *Handbook for Chemical Society Authors* (Special Publication no. 14, 1961, 2nd ed. London: The Chemical Society)). For nomenclature of amino acids, this Handbook (p. 186) and *Br. J. Nutr.* 1953, 7, 1 should be consulted. The symbols and abbreviations, other than units, are essentially those listed in *British Standard* 1991: Part 1, *General: Letter Symbols, Signs and Abbreviations* (B.S. 1991: Part 1: 1954, incorporating amendments issued July, 1955 (PD 2241) February, 1957 (PD 2707) and October, 1960 (PD 3920), 7s.). BMR may be used for basal metabolic rate or basal metabolism.

Spectrophotometric terms and symbols are those proposed by the Society of Public Analysts and other Analytical Chemists (see *Analyst*, 1942, 67, 164). For mathematical notation and numerals the rules laid down in *Proc. R. Soc. A*, 1909, 82, 14, should be followed. The attention of authors is particularly drawn to the following symbols: m(=milli)= 10^{-3} , μ (=

micro)= 10^{-6} , n or m μ (=nano or millimicro)= 10^{-9} and p or $\mu\mu$ (=pico or micromicro)= 10^{-12} . Note also that ml (millilitres) should be used instead of c.c., μm (micrometre) instead of μ (micron), μg (microgramme) instead of γ .

Proofs. Proofs are sent to authors in order that they may make sure that the paper has been correctly set up in type, and not that they may add new material. Otherwise increased printing charges are inevitable. Excessive alteration may have to be disallowed. The symbols used to indicate corrections should be those laid down in *British Standard* 1219C: 1958 (2s. 6d.).

A corrected proof and the typescript should be returned without delay to Dr C. C. Balch, National Institute for Research in Dairying, Shinfield, Reading, RG2 9AT. Contributors who reside outside Europe will receive by air mail proofs of their papers, but not the typescripts.

Reprints. Twenty-five reprints are supplied free of cost. Additional reprints may be purchased if the Printers are notified on the appropriate form immediately the proof of the paper is received.

For reprints of abstracts of communications see below.

Abstracts of Communications. Authors who wish to have summaries of papers read by them before The Nutrition Society recorded in the *Proceedings* must submit them in a final form. Only minor corrections, which must be handed in before or at the meeting, will be allowed in the precirculated proofs. Reprints should be ordered direct from Lamport Gilbert Printers Ltd, 117 Wantage Road, Reading, Berks, RG3 2SW on the form sent with the acknowledgement of the abstract. No free reprints are given.