Trace elements in human and animal nutrition. Ed. 3.

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Abstract: Keeping up to date in trace element nutrition is a forbidding task. Advances in analytical techniques in the last decade have greatly simplified the detection of many trace elements and extended the measurable range of concentrations. Biochemists and nutritionists have been quick to exploit the new techniques and has been a plethora of publications, particularly on the metabolism of the elements Cu, Zn, Mn and Se. Trace elements have been shown to differ widely in their metabolism.
species to differ in the way they metabolise a given element. Each trace ele
law unto itself and as such it demands specialist attention. All this needs to
underline the remarkable achievement of Professor Underwood in producin
dition of "Trace Elements in Human and Animal Nutrition". In successfully ki
date with no less than 27 trace elements, he acquires in the eyes of the spe
stature shared only by Goldsmith's village teacher-"that one small head cou
knew".
The author has been able to build on the solid foundation of two previous e
have been widely used by those wishing to understand the nutritional roles of elements and their biochemical and pathological significance to animals and earlier structure is maintained with the literature on each principal trace ele
subdivided into sections dealing with its distribution in animal tissues, met
deficiency symptoms and functions, dietary requirements, toxicity problems to human health. Cd, Cr, Ni, Si and V have been added to the list of elements:
chapters: further symptoms of the concern over growing trace-element bu
by increasing industrialization and urbanisation are the new contributions on Ge and Zr in the section covering miscellaneous trace elements.
Whereas many authors would have been content to rest on their laurels, P
Underwood has rewritten much of the material from earlier editions to acce
perspectives opened up by recent research. The rapid growth in our knowle
element metabolism is illustrated by the role described for Cu in the formati
This function of Cu was unknown when the last edition went to print in 1962
meantime its biochemical basis has been traced to the activity of monoamin
Cu-containing enzyme, which oxidatively deaminases the epsilon-amino grc
residues in elastin. This reaction leads to the formation of desmosine which
cross-linkage groups in elastin. Cu-deficient chicks, pigs and guineapigs can
aortic or aterial rupture due to the fundamental defect in elastin.
There are signs in the book that the strain of keeping pace with the explosi
in divers fields was beginning to tell. In the chapter on copper, for example, si
significant references appear to have been missed. One also has the impres
without the proceedings of the assembly of trace-element specialists in Ab
the coverage of the period 1967-70 would have been incomplete. Nothing can

detract from the merit of this book, however. It will remain for many years a
of reference to nutrition scientists, biochemists and medical researchers. C
and others concerned with pollution of the environment are presented with
opportunity to base predictions of potential health hazards on scientific fact.

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Organism descriptor(s): birds, guineapigs, man
Descriptor(s): amine oxidase (flavin-containing), analytical methods, animal models, nutrition, animal tissues, chicks, copper, deficiency, diets, estimation, health, lysine, metabolism, minerals, nutritionists, pollution, poultry, residues, symptoms, techniques, trace elements, health hazards
Identifier(s): analytical techniques, domesticated birds, environmental pollution, microelements, monoamine oxidase
Broader term(s): Cavia, Caviidae, rodents, mammals, vertebrates, Chordata, animal eukaryotes, Homo, Hominidae, primates

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