Teaching of Biology in Schools.

To the President of the Board of Education,

THE VICTORIA INSTITUTE, OR
PHILOSOPHICAL SOCIETY OF GREAT BRITAIN,
1, CENTRAL BUILDINGS, LONDON, S.W.1.

Sir,

October 6th, 1941.

I have the honour, by request of the Council of the Victoria Institute, or Philosophical Society of Great Britain, to bring to your notice a complaint that is being made in respect of the manner of teaching biology in schools.

Representations have been made to the Council that correct teaching of biology is prejudiced by the use, with official sanction, of text-books in which the theory of organic evolution is assumed to be a fact of science and, while facts which appear to favour the theory are stressed, others which tell heavily against it are left unmentioned; are, in effect, suppressed; a method of teaching which, if employed, is unscientific and unphilosophical.

In consequence of these representations the Council have felt it desirable to appoint, from among the Fellows of the Society, a small committee of gentlemen possessing necessary scientific qualification, to examine into the matter and report to them on the allegation of unfair teaching.

A copy of this Committee’s report, substantiating the original representations, is submitted herewith, for favour of perusal by the Board of Education. It embodies a few quotations only, by way of samples, but many more can be furnished, if desired.

The Council venture to hope that the Report may be given the serious consideration it merits, since, in their opinion, ill consequences are bound to result; not only from suppression of truth, but worse, from the harnessing of immature minds in advance to a theory, adoption of which in certain quarters as the basis of a philosophy of life has already, they have good reason to know, served to undermine belief in God and in man’s accountability to Him, with disastrous results in the moral realm.

They desire me to lay special emphasis on the point at issue in this submission, which is solely that of unfair presentation. They raise no objection whatever to employment of the theory, or any modification thereof, as a mode of teaching, a working hypothesis, provided the facts standing against it are given equal prominence with those in its favour, and that discussion of the subject be reserved entirely for older scholars; who should also be warned that, though at present popular with many biologists, the theory is not accredited by all, has certainly not been proved true, and to which, in point of fact, the fossils at present known are very unfavourable.

I have the honour to be, Sir,
Your obedient servant,

T. C. Skinner, Lt.-Col.,
Honorary Secretary.
Our investigations show that the allegations regarding the unsatisfactory nature of biological text-books are justified.

2. It will be generally agreed that, among others, the following canons should be observed by every teacher of science:—

(a) Adoption of careful and accurate phraseology.
(b) Making sharp distinction between ascertained fact and unverified theory.
(c) When enunciating a theory, taking great care to give equal prominence to facts against and to those in favour of the theory.
(d) Refraining from making assertions demonstrably untrue.
(e) Making clear that Science tells us nothing of origins, that it can only observe what now exists and draw inferences as to the past; speculation as to origins coming within the domain of the philosopher.

3. Our enquiry shows that all these canons are to-day being violated by authors of biological textbooks. From scores of violations of the above canons the following will serve as illustrations:—

(a) CARELESS AND INACCURATE PHRASEOLOGY.

"The birds and mammals solved the problem (of maintaining the blood at a constant temperature) by acquiring a non-conductive covering" (School Certificate Biology, by Shann and Gillespie, p. 312). The correct way of making this statement would be: "The hairy covering of mammals and the body feathers of birds assist greatly the maintenance of the bodily heat of these animals at a constant temperature, generally above that of the surrounding medium."

(b) FAILURE TO DISTINGUISH BETWEEN ASCERTAINED FACT AND UNVERIFIED THEORY.

"In whales all external trace of hind legs has disappeared" (Zoology, by Shipley and MacBride, p. 697). The correct statement
is, "Whales have no external hind limbs," or "have no hind limbs." This is an established fact. That their ancestors had these and lost them is a theory unsupported by the evidence of the fossils.

(c) One-Sided Presentation of a Theory.

As an example of omission it may be noted how, in support of the theory that man is derived from a tailed ancestor, most textbooks say that the human embryo has a tail which is of no use, but is formed because the embryo during its development has to recapitulate the ancestral stage of a tailed ancestor; thus Prof. R. Munro Fox writes (Biology, p. 303): "In the embryos and larvæ of animals there are structures which can only be explained by evolution. . . . The human embryo at one stage has a tail (Fig. 150)"; but neither this book nor any other school book making this statement mentions the fact that at one stage the human and all mammalian embryos have a length of gut in front of the mouth and behind the vent, for the reason that no adult animal can ever have existed having such an alimentary canal: so to have mentioned this would have destroyed the evidence supposed to be furnished by the embryonic tail. In this connection, Prof. L. Vialleton wrote in 1924 (Membres et Ceintures des Vertébrés tetrapodes," p. vii): "Depuis cinquante ans les manuels sont une simple illustration du transformisme, ne mettent en lumière que ce qui lui est favorable. Passant sous silence tout ce qui est en dehors de lui ou contre lui"—a true but severe indictment of the methods of biologists to-day.

(d) Making Assertions Demonstrably False.

"The rocks of that (the Pre-Cambrian) period have been so altered by heating, crushing and in other ways that we cannot hope for palaeontological evidence from them" (A General Zoology of the Invertebrates, by G. S. Carter, p. 470). R. Munro Fox writes (op. cit., p. 297): "The lowest layers of rocks which once contained fossils have been literally cooked . . . in this process all fossils are destroyed." These statements are untrue. Most Pre-Cambrian rocks have been altered, but there are in several parts of the earth great thicknesses of these rocks, e.g., the Cuddapah formation in India, which have undergone no alteration and are eminently fitted to have preserved fossil relics. The entire absence of fossils in these formations is a most serious objection to the theory of organic evolution, because in regions not far removed rocks of the succeeding Cambrian system exhibit abundant fossil remains of highly developed animals of the most diversified types.
On page 227 of *Biology: An Introductory Textbook to Matriculation Standard*, by A. P. Graham and B. T. Marples, the following statement occurs: “Another important characteristic of vertebrates is the presence of paired openings through the body wall passing from the alimentary canal to the outside world. These paired openings are called gill slits because in fishes they contain the gills and are concerned with breathing. Gill slits are present in all vertebrates at least during the early stages of their development.” Shipley and MacBride write (*op. cit.*, p. 385): “All vertebrata possess at some period of their lives slits in the wall of the front part of the alimentary canal.” Munro Fox says (*op. cit.*, p. 303): “The embryos of both birds and mammals, including man himself, have gill slits.”

The above incorrect statements are made as evidence of the descent of reptiles, birds and mammals, including man, from fish-like ancestors. The truth, as can be ascertained by consulting any reliable modern book on human anatomy or physiology, such as Cunningham’s *Anatomy* and Keith’s *Embryology*, is that at no stage in the human embryo is the wall of the alimentary canal perforated.

(e) **Dogmatic Assertions regarding Origins.**

“Bats came from mammal ancestors not unlike shrew mice” (*R. Munro Fox, *op. cit.*, p. 301). As the earliest known fossils of bats, those of the Eocene, have all the features that distinguish bats from all other animals, some of these being practically indistinguishable from genera now living, there is no scientific justification for the above dogmatic assertion. All the biologist can say *qua* biologist, is that nothing is known about the origin of bats. Those who adopt the theory of evolution as a philosophy have to derive bats from some other type of animal, and, as the teeth of bats are more like those of Insectivora than of other groups of animals, a shrew-like ancestor is postulated. But this is mere speculation and should not find place in any book written for educational purposes.

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**Board of Education,**

**Alexandra House,**

**Kingsway, London, W.C.2.**

**Dear Sir,**

I am writing on behalf of the President of the Board of Education to acknowledge the receipt of your letter of the 6th October on the subject of the teaching of biology in schools. I will lay your letter before Mr. Butler.  

Lt.-Col. T. C. Skinner,  
The Victoria Institute,  
1, Central Buildings, S.W.1.  

Yours faithfully,  
Sylvia Goodfellow,  
*Private Secretary.*