

Crimes in Scientific Writing*

by Robert V. Kesling
CURATOR OF
MICROPALAEONTOLOGY
MUSEUM OF
PALEONTOLOGY
UNIVERSITY OF MICHIGAN
ANN ARBOR, MICHIGAN

My name is Editor. I am a word detective. Down at headquarters they call me in to force the truth from delinquent manuscripts. It isn't easy. I meet them all—the hardboiled clichés, the crooked constructions, the violent adjectives, pronouns from off the streets, and misspellings from the waterfront. My job is to bring to justice these thieves of logic and killers of meaning.

During a protracted period of criticizing term papers and theses and a brief interval of editing articles for a scientific journal, I have become familiar with the underworld of scientific writing. Strange deeds are done, apparently without motive. My most difficult beat is through my own paragraphs. Danger lurks in every statement.

Recently, when half the verbs were mugged in one article, even the Chief became alarmed. He called us into his office. "Men," he said, "the reading public must be protected. Let's get to the bottom of this." (Inasmuch as we were editors, there was naturally no mention of monetary reward.) Although preventive criminology was new to us, we soon

outlined a program.

The best way to establish law and order, we decided, is to swear in a junior staff of young authors, each trained in detection of errors. As exercises, I offer them the following grammatical mysteries from my case book.

1. *The Case of the Ambushed Antecedent.* So many antecedents have turned up in the morgue, that headquarters has a standing rule to investigate every pronoun. Unless he can prove that his antecedent is alive and well, the pronoun is brought in for questioning. "It" is a chronic offender. In the examples below, only scientific names have been changed to protect the not-so-innocent. Can you solve these problems?

The shell has a rough texture, but it is possible that part of it is adhering matrix.

The dorsal shield is separated by a shallow groove from the ventral. This part of the shell is very thin. One of the remarkable features of the immature shell is its spinose ornamentation. They are long, hollow, and fragile.

2. *The Case of the Pendent Participle.* Participles have been found hanging in some of our otherwise respectable sentences. Their author had been off guard for only a moment. Tragedy struck.

Removing the carapace carefully, all of the appendages lay in close association.

Having a deep constriction between the cephalothorax and abdomen, the classification of this arachnoid . . .

Varying from .72 to .76 mm., the average length was found to be .74 mm.

*Any resemblance to scientific articles, living or dead, is purely coincidental.

Knowing the nature of their thoracic appendages, these minute malacostracans can be readily separated into orders.

The following gave us some anxious moments before we reached the end of the sentence:

A broad stripe commonly found in young specimens running from one end to the other disappears before the adult stage.

3. *The Case of the Corrupted Comparative.* Although it is obviously illegal to use "more" and "most" or the terminations "-er" and "-est" with certain adjectives, there are many violators. The common uncomparable adjectives include absolute, basic, complete, contemporary, devoid, empty, entire, essential, final, full, ideal, impossible, perfect, possible, pure sufficient, superior, and unique. One can say of a specimen that it is more nearly perfect than another, but not that it is more perfect. In addition, the nouns and adverbs related to these adjectives cannot be compared.

Measurements are absolutely essential to determine . . .

Such an utterly basic approach . . .

We regard these in their fullest entirety . . .

To more completely observe the action . . .

4. *The Case of the Fabulous Fact.* By strange English interpretations, the upright Dr. Fact can become the sinister Mr. "Fact," with an entirely different personality. Dr. Fact is true, undeniably, definitely. He is above reproach or question. But Mr. "Fact" is a confidence man, who impersonates such law-abiding words as "probability," "i n d i c a t i o n s," "theory," "statement," and "assumption." Here is his handiwork:

The facts listed by Brown should be studied critically, to determine if they are biased.

This fact can only be confirmed by statistical studies.

We decided to use acetic acid, in spite of the fact that it might conceivably corrode the thin lamellae. Our study supports the fact that classification need not be based on surface sculpture.

5. *The Case of the Importunate Impossibility.* Some of these maniacal boners successfully elude the editor's blue pencil and take refuge in print, from where they continue their deprivations.

This specimen is one of six others found by the writer.

The formation exposed here is not certainly identified, but may possibly be part of the Haybesee formation.

The ends of the spines are 2 mm. long.

The average length is about 25 mm., but it varies greatly.

Certain crabs spend all of their lives in empty gastropod shells.

6. *The Case of the Paralyzed Parallel.* Many good compound sentences, predicates, and objects are led astray by non-parallel constructions or by comparison of features in different categories. They lose all feeling.

In the pedicle valve, the hinge is formed by long teeth but by deep sockets in the brachial. (Solution: The hinge is formed by long teeth in the pedicle valve and deep sockets in the brachial.)

On the dorsal side the carapace is convex and tuberculate, but the surface is flat and smooth on the ventral side. (Solution: The dorsal side of the carapace is convex and tuberculate, but the ventral is flat and smooth.)

The eyes are extremely large, but the thorax is much constricted. (Solution: Two sentences.)

7. *The Case of the Worldly Wordiness.* A few years ago, a group of evil scientists were found to be corresponding in a new language. Our cryptographers finally broke up the nefarious ring when an English translation was intercepted in an abstract. The glossary in Table 1 will enable you to read most works coded in "Sciencn."

8. *The Case of the Affluent Affectations.* Be quick on the draw with your blue pencil when you see a morphological feature beset by sentimental, bespangled adjectives. They are robbing it of all significant size and shape.

This exotic little species is characterized by a gracefully curving spine and by exquisite coloring. As seen from above it presents a truly gorgeous aspect. It is even more beautiful than . . .

9. *The Case of the Topsy-turvy Topic.* A paragraph which veers from this subject to that is up to no good. Take it into custody immediately.

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Table 1. Glossary of Terms in the "Sciench" Code

"Sciench"	English Translation
<p>Our research, designed to test the fatal effects of XXX on dogs, was carried out by intravenously introducing the drug. In the experiments, a relatively small quantity, 3 cubic centimeters, was administered to each animal. In each case, XXX proved to be fatal, all dogs expiring before a lapse of five minutes after the injection.</p>	<p>The intravenous injection of only 3 cc. of XXX kills a dog within five minutes.</p>
<p>A method, which was found to be expedient and not very difficult to accomplish and which possessed a high degree of accuracy in its results, was devised whereby . . .</p>	<p>An easy, accurate way to</p>
<p>The quantitative findings reported by Smith were analyzed and seemed, according to our interpretation, to contain significant inconsistencies. Our reasons for attaining this diverse opinion are</p>	<p>We think Smith's measurements are wrong because</p>
<p>Of the utmost importance is the need to examine quantitatively the various instars which have not reached maturity, in order to evaluate and determine the validity of the theory advocated by Przibram.</p>	<p>To test Przibram's theory, all immature instars must be measured.</p>
<p>One might well be censured for so tenaciously propounding this hypothesis in view of the weight of evidence to the contrary.</p>	<p>I was wrong.</p>

10. *The Case of the Spureous Spelling.* Did you apprehend this one? The word, of course, is *spurious*. Other counterfeit spellings can be thwarted by an up-to-date dictionary.

276 You did remarkably well, gentlemen.

You are each awarded a good grammar badge and a license to write.

Attention, author-detectives! Arrest all malefactors in your first draft, bring them to the bar of justice, and give them proper sentences. That is all.

