

Hints for Writing Science

Telling the public about science and technology has been the work of Science Service since 1921. In those years many scientists, writers, and editors have asked questions that have been answered by the following suggestions, originally compiled about two decades ago.

Don'ts for Would-Be Writers of Science

By the late EDWIN E. SLOSSON
First Director of SCIENCE SERVICE

Don't overestimate the reader's knowledge and don't underestimate the reader's intelligence. He may not know as much as you about this particular thing—let's hope not anyway—but otherwise he may be as bright as you are—let's hope so anyway.

Don't try to tell all you know in 500 words. Leave some over for another time. The clean plate rule does not apply here.

Don't think that because a thing is old to you it is known to the public. Many of your readers are still living in the nineteenth century; some of them in the eighteenth. Anything new to your readers is "news" to them if hung on a timely peg.

Don't leave out the human interest. Your reader is a human being even if you are only a scientist.

Don't forget that your reader is interrupting you every ten lines to ask, "Why?" "What for?" or "Well, what of it?" and if you don't answer his tacit question he will soon stop reading.

Don't think that you can make your topic more attractive by tricking it out with fairy lore or baby talk or irrelevant jokes or extravagant language. Bring out its real and intrinsic interest as forcibly as you can. Set off the red fire if you like, but be sure it lights up the object instead of drawing attention away from it.

Don't say "this discovery is interesting" unless you can prove that it is, and if you can prove it, you don't have to say it.

Don't suppose you must give bibliographical references to all the literature of the subject, but don't fail to give a clue by which the interested reader can get on its trail.

Don't fail to put your best foot forward. Otherwise you may not have a chance to use the other foot. Note the construction of the news story in any first-class paper. It is built up on the same logical system as the symphony or opera overture. The opening paragraph gives in succinct fashion the main point of interest, the gist of the story, just as the first movement of a musical composition expresses the theme or motif.

Don't expect the editor to explain why he objects to your manuscript. He is probably right in his verdict, but if you would make him give a reason for it, he will have to invent one and it would probably be wrong.

Don't back up too far to get a running start. Remember the man who wanted to jump over a hill. He ran a mile to work up momentum and was so tired when he got to the bottom of the hill that he had to sit down and rest. So will your readers. Ninety per cent of the manuscripts that I have handled in 20 years as an

editor would have been improved by cutting off the first page or paragraph. Yet authors, like hens, kick on decapitation.

Don't imagine that you must add a pretty but superfluous paragraph at the end, like the coda of a sonata. The most effective close is to quit when you get through.

Don't shoot in the air. Aim at somebody. You may miss him, but you are more likely to hit somebody else than if you aim at nobody. Look out of your window and note the first person coming along the street. Imagine yourself stopping this man or woman on the sidewalk, and, like the Ancient Mariner, holding his or her attention till you have told your tale to the end.

Don't regurgitate undigested morsels. It is a disgusting habit.

Don't refer to notes or books while writing. Read up on the subject as thoroughly as you can, and take as many notes as you need; then put away all your notes and books out of reach and next day or at least an hour later lay clean sheets of paper on a clear desk and write out what you know about it, in your own way. Afterwards, preferably next day, read over your manuscript critically, verify your facts, correct your data, revise your English and add any essential points, but don't expect the reader to be interested in what is so uninteresting to you that you cannot keep it in mind a single hour.

Don't define a hard word by a harder word: Vladivostok is a hard word, but when a press correspondent arrives at Vladivostok he goes right on inland without stopping to explain that "this is a city south of Khabarovsk and east of Tsitsikhar." So, if you want to say "calorie," say it, but don't make it worse by "explaining" it as "the quantity of heat necessary to effect a rise of temperature of one degree Centigrade of a cube of water each dimension of which is one tenth part of the length of a bar of platinum and iridium alloy lying in the observatory of St. Cloud." If you think you must define the calorie say casually something like this, that 100 calories of energy can be derived from three cubes of sugar or from a small pat of butter, or explain that a man needs to expend 100 calories an hour to keep his body running, and 160 calories if he is working hard.

Don't think you must leave out all the technical terms. Use them whenever necessary without apology, and if possible without formal definition. People are not so easily scared by strange words as you may think. They rather like 'em. Kipling is read with delight by old and young, yet his prose and verse are crammed with technical terms. Having exhausted the military, nautical and mechanical vocabularies, he invented a new and unknown nomenclature for his story "With the Night Mail," and didn't stop to define one of the technical terms. In his "Just So" stories for the kiddies he sticks in long names like plums in a pudding. A Kipling dictionary has been published, but even the editor could not run down all the peculiar words Kipling had picked up. But the ordinary

reader does not need the dictionary. He gets the meaning from the run of the story, for the story is so written that he will get the meaning as he runs. When the Great War (First World War) broke out everybody had to learn a new language for which there was no dictionary. But the war correspondent wrote without hesitation: "At zero hour the barrage was raised and the poilu and the doughboy sprang over the top, sticking their bayonets into the boche." And the man in the street read it without batting an eye, although the sentence contained half a dozen words not to be found in his vocabulary before. But if this sentence were being written by one of our conscientious scientists, he would word it in this fashion:

"At zero hour—to use the military term for the time set for the beginning of an offensive—the barrage—that is to say the line on which the artillery fire is directed—was raised and the poilu—this is a French slang term for soldier, meaning 'hairy' and corresponding to our 'rough-neck' and the doughboy—this is an American slang term for infantryman derived either from the round buttons worn in the Civil War or the 'dobe' huts inhabited in the Mexican War or the pipe-clayed belts of the Revolutionary War or because the Secretary of War was named Baker—sprang over the top—that is to say, surmounted the parapet of the entrenchments—sticking their bayonets—a weapon invented at Bayonne, France, in 1650—into the boche—a contemptuous term referring to the Germans, probably an abbreviation of *caboche* or *blockhead* originally applied to Alsatians."

Stories That Should Be Handled with Care

By WATSON DAVIS
Director of SCIENCE SERVICE

Stories on this list should, in general, *not* be used, at least until they are thoroughly checked and investigated by several competent specialists in the subject. These are not forbidden stories for some of the impossible things of today may become possible tomorrow, but scientific discoveries rarely come nowadays from accident or inspiration. They are usually the result of systematic research of many investigators.

General

Any "secret" scientific or technical process.

Any process or preparation, where the essential element is not disclosed, bearing a coined name.

Announcement of the sudden achievement of "what scientists have long sought for in vain," and rediscoveries of "lost arts."

Complaints of "a conspiracy of silence" against the inventor or other evidence of a persecution complex.

Sweeping claims of any sort.

"Supernatural" Stuff

Telepathy and mind reading.

Spirit manifestations of any sort.

Long range weather forecasts in general.

Long range weather forecasts based on animal habits.

Astrologists and horoscopes.

End of the world predictions for the near future.

Evil or beneficial influence of the number 13.

Evil or beneficial influence of the number 7.

Evil or beneficial influence of any number.

Stars affecting human events or destinies.

Phrenology.

Numerology.

Predictions based on lines of hand, or shape of nose.

Intelligence or character reading based on size and shape of features, handwriting or hands.

Charms, amulets, lucky coins and other such survivals of savagery.

Rediscoveries of lost prophetic books.

Animals that "think," "read minds," etc.

Medical

Hypnotic "cures."

Hypnotic treatments by non-medical practitioners.

Mental treatments by others than physicians or psychologists.

Universal germ killers.

Any absolute cure of any disease.

Unauthenticated treatments of cancer, tuberculosis, colds and such diseases.

Cancer "cures."

Cures of deafness, blindness or baldness.

Doctors who advertise.

Cures for "male and female weakness."

Drugs for curing obesity and underweight.

Rejuvenation.

Electrical treatments for serious disorders.

Electric belts.

Electronic treatments by the Abrams or other such methods.

Spinal adjustments.

Whiskey as an antidote for snake bite.

Mad stones for snake bite.

"Marking" of children by experiences of mother before birth.

Determining or controlling of sex before birth.

Mineral waters as cures for disease.

Cure of rabies by a stone or by shooting the dog.

Physics and Mechanics

Perpetual motion.

Machines that produce more energy than they use.

Fuelless motors.

Chemicals that greatly increase gasoline mileage.

Fluids that recharge storage batteries.

Methods of burning water or ashes.

Chemicals that make coal burn hotter.

Rediscovery of supposed lost arts, such as hardening of copper.

Death rays.

Engine stopping rays.

Divining rods.

Intuitive methods of discovering water, oil and minerals.

Transmutation of metals.

Animal and Plant World

Creation of life.

Spontaneous generation of life.

Sea serpents.

Seeds that grow after more than 300 years,

especially that old chestnut about wheat in mummy cases.

Superhuman intelligence in animals.

Prehistoric and gigantic animals living today.

Gigantic snakes in temperate zones.

"Hears." "nerves" or other animal-like organs in plants.

Inheritance of acquired characters.

Absolute proof or disproof of evolution.

Hybrids between unlike plants or animals: e. g., goat and pig, or carrot and beet.

Toads or frogs enclosed for many years in stones or rocks.

Animals (e. g., turtle or frog) living in the human stomach after being swallowed.

Living "Missing Links."

Man-eating trees.

Miscellaneous

Discovery of prehistoric men of gigantic or dwarfed size.

Ozone in sea-side, mountain or prairie air; radium water.

Messages from or to Mars or other planets; inhabitants of other planets.

"Moron" as synonym for "sex offender."

People living to extreme ages, as 115 and 120 years.

Skeletons or mummies of "giants" (more than 7 feet tall).

"Squaring" the circle; trisecting the angle.

Moon's influence on weather, crops or people.

Influence of sunspots on animal propagation, death rate, etc.

Children "brighter than Einstein."

Discovery of the secret of the pyramids, sphinx or other ancient monuments.

Discovery and interpretation of ciphers in old books and manuscripts.

Lost continents, such as Atlantis and Mu.

Equinoxial storms.

Earthquakes are necessarily accompanied by volcanic eruptions.

Moundbuilders as a "mysterious civilization." (They were just plain Indians.)

About Writing For Science Service

In reply to inquiries about writing for Science Service, the following information is furnished:

Science Service invites the cooperation of competent writers, particularly those who are scientifically trained and engaged in research work. In general, it does not appoint correspondents on part-time or full salary. It does not appoint representatives other than its regular staff. It does not assign particular geographical territory or scientific fields to its correspondents.

Science Service material must have the approval of the scientific world and it is expected that those who submit material to us will prepare it with the cooperation and approval of the scientist whose work is being reported.

Science Service syndicates news and features to many subscribing newspapers in all parts of the world. The stories carried on our leased coast-to-coast wire and in our other newspaper reports are used in various parts of newspapers—news columns, editorial pages, Sunday feature sections and daily magazine pages. They are also used in magazines, among them the SCIENCE NEWS LETTER, published by Science

Service each week. Science Service's field is the whole of science, in the widest sense of the word.

All news stories should have both news angle and science value. In all but exceptional cases, they should be written in the form, style and length customary in the news pages of a daily paper. Tell the news in the first paragraph or sentence. Usually, news stories are not signed by individuals but "By Science Service."

Three to four hundred words is the preferable length for news stories. A thousand words is too long for the average newspaper column. Look at a daily newspaper and note how few stories are longer than half a column.

News stories begin with a date-line showing the place of origin of news or where written. Thus: WASHINGTON. Copy should be type-written, triple spaced. Put your name and address on your story.

Science Service pays professional and amateur writers whose material proves acceptable.

One cent a word is the minimum rate paid, on acceptance, and more is paid for stories of exceptional value and news interest. It does not pay scientists for coverage of their own researches.

The first consideration in a Science Service story is to tell about or interpret a scientific event. But the news stories must be so well written that large newspapers will use them without rewriting or revision, either in form or language. Tell your story so that those who know nothing about science will understand and wish to read it. Weave in the scientific background that the man in the street does not have. Use simple words. Make your story as graphic as if you were talking about it.

The credit line, "By Science Service," must stand for accuracy of content and comment. Check up facts, figures, names, dates, places, and if you are not an authority on the subject, get your story checked by some one who is. State on the MS. source of information, whether personal interview, letter, magazine, or otherwise. If from a scientific journal, give date and page number. It is necessary that title (Dr., Prof., etc.), complete name and initials, position, and location be given for all persons named. If the person quoted or giving information has had a chance to look it over, so state. (Whenever possible all Science Service stories are checked in this way.)

Science Service does not wish stories taken from second-hand sources, magazines, newspapers, etc. Whenever such sources have to be used, the material must be checked by an authority, or amplified from the original source under competent advice. Attach all the material—technical articles, statements, letters, etc.—used in preparing the story, since such material often helps. Material is submitted to Science Service at the risk of the reader. Prompt decisions are the rule.

Time is the essence of news. Rush in your copy by air mail. If you wire us, be sure it is at press rate, which is less expensive than night letter or any other rate. Timeliness is often more important than literary preparation. Science Service pays for authentic *information* (copies of new reports, etc.) of important science developments. Get the news to us promptly even when you have not time to write it.

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