Science vs. Beauty?

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My previous column ("Literary Science Blunders," January-February 1995) was about the gulf that too often divides the culture of science from the culture of the liberal arts. Nowhere is this chasm more noticeable than in the lines of certain poets who believe that a knowledge of science somehow destroys one's awareness of the wonders and beauty of nature.

Over the decades I've collected some examples:

The moon shines down with
borrowed light,
So savants say — I do not doubt it.
Suffice its silver trance my sight,
That's all I want to know about it.
A fig for science. . . .

—Robert Service

The goose that laid the golden egg
Died looking up its crotch
To find out how its sphincter
worked.
Would you lay well? Don't watch.

—X. J. Kennedy,
"Ars Poetica"

I'd rather learn from one bird how
to sing
Than teach ten thousand stars how
not to dance.

—e e cummings

While you and i have lips and
voice which
are for kissing and to sing with
who cares if some one eyed son
of a bitch
invents an instrument to measure
Spring with?

—e e cummings

. . . Do not all charms fly
At the mere touch of cold
philosophy?
There was an awful rainbow
once in heaven:
We know her woof, her texture;
she is given
In the dull catalogue of common
things.
Philosophy will clip an Angel's
wings,
Conquer all mysteries by rule and
line,
Empty the haunted air and gnomed
mine—
Unweave a rainbow. . . .

—John Keats, "Lamia"

"Arcturus" is his other name—
I'd rather call him "Star."
It's very mean of Science
To go and interfere!

I pull a flower from the woods—
A monster with a glass
Computes the stamens in a breath
And has her in a "class"!

—Emily Dickinson

A Color stands abroad
On Solitary Fields
That Science cannot overtake
But Human Nature feels.

It waits upon the Lawn,
It shows the furthest Tree
Upon the furthest Slope you
know
It almost speaks to you.

Then as Horizons step
Or Noons report away
Without the Formula of sound
It passes and we stay—

A quality of loss
Affecting our Content
As Trade had suddenly encroached
Upon a Sacrament.

—Emily Dickinson

Sweet is the lore which Nature
brings;
Our meddling intellect
Mis-shapes the beauteous forms of
things:—
We murder to dissect.

Enough of Science and of Art;
Close up those barren leaves;
Come forth, and bring with you a
heart
That watches and receives.

—Wordsworth,
"The Tables Turned"

Today we breathe a commonplace,
Polemic, scientific air;
We strip illusion of her veil;
We vivisect the nightingale
To probe the secret of his note
The Muse in alien ways remote
Goes wandering.

—Thomas Bailey Aldrich

Science! true daughter of Old Time thou art!
Who alterest all things with thy peering eyes.
Why preyest thou thus upon the poet's heart,
Vulture, whose wings are dull realities?

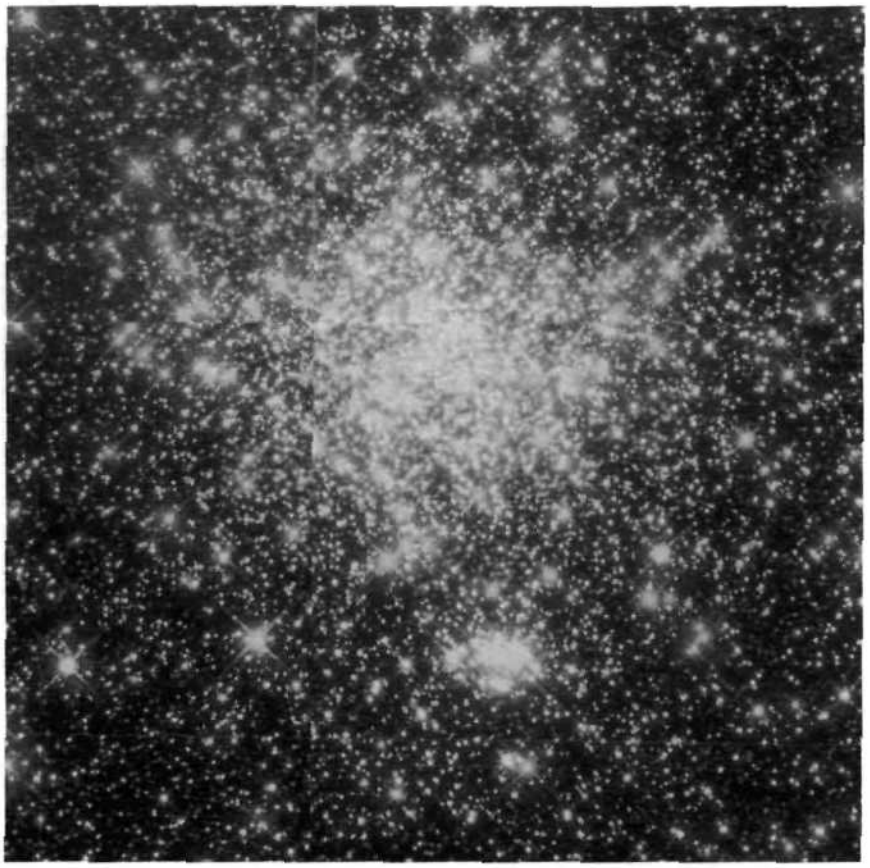
—Edgar Allan Poe

There's machinery in the butterfly,
There's a mainspring to the bee.
There's hydraulics to a daisy
And contraptions to a tree.

If we could see the birdie
That makes the chirping sound
With psycho-analytic eyes,
With X-ray, scientific eyes,
We could see the wheels go round.

And I hope all men
Who think like this
Will soon lie underground.

—Vachel Lindsay



"The vastness of the heavens stretches my imagination," said Richard Feynman. And science continually reveals more cause for wonder. This new Hubble Space Telescope image reveals a concentration of nearly 10,000 stars in a pair of star clusters 166,000 light-years away in the Large Magellanic Cloud. Previously such rich detail was seen only in star birth regions in our own galaxy, but Hubble extends studies of the birth and evolution of stars a hundred times farther into the universe. (Photo: NASA Space Telecope Science Institute)

Similar sentiments have been expressed in prose. Here are a few: Coleridge: "The real antithesis of poetry is not prose but science." Billy Rose: "I wish the engineers would keep their slide rules out of the bits of fairyland left in this bollixed up world." Nietzsche: "They [scientists] have cold, withered eyes before which all birds are unplumed."

There is something to be said for such sentiment, though not much. It is possible for scientists to become so *wrapped up in their work that they* lose all sense of nature's beauty and mystery. "When you understand all about the sun and all about the atmosphere and all about the rotation of the earth," wrote Alfred North Whitehead, a philosopher who stood astride the two cultures, "you may still miss the radiance of the sunset."

G. K. Chesterton made the same point in his amusing story "The Unthinkable Theory of Professor Green," in *Tales of the Long Bow*. Green is an astronomer who forgot about the world around him until one day when he *fell in love with a farmer's daughter.* He announces a lecture on his discovery of a new planet. The auditorium is *packed with colleagues while he de*scribes one of the planet's strange creatures. Slowly it dawns on Green's listeners *that he is describing a cow.*

I suppose that scientists like Professor Green, before he discovered the earth, exist, but if so, I have yet to encounter one. On the contrary, almost all scientists believe that as their knowledge increases, their sense of wonder also grows. The scientist sees a flower, said physicist John Tyndall, "with a wonder superadded."

Professor Green's unthinkable theory reminds me of stanza xcii from the first canto of Byron's *Don Juan*:

He thought about himself, and the whole earth,
Of man the wonderful, and of the stars,
And how the deuce they ever could have birth;
[illegible]
quakes, and of wars,
How many miles the moon might have in girth,
Of air-balloons, and of the many bars
To perfect knowledge of the boundless skies;—
And then he thought of Donna Julia's eyes.

The Laputans, in *Gulliver's Travels,* describe a woman's beauty by "rhombs, circles, parallelograms, ellipses, and other geometrical terms." Arthur S. Eddington, writing on "Science and Mysticism" in *The Nature of the Physical World,* quotes from a page on winds and waves in a textbook on hydrodynamics. He then compares this with the aesthetic experience of watching actual sea waves "dancing in the sunshine."

That knowledge of science adds to one's appreciation of the mystery and splendor of the cosmos has nowhere been more vigorously expressed than by the late physicist Richard Feynman, in Christopher Syke's *No Ordinary Genius* (W. W. Norton, 1994). He described an artist friend who would hold up a flower and say: "I, as an artist, can see how beautiful a flower is. But you, as a scientist, take it all apart and it becomes dull."

"I think he's kind of nutty," says Feynman, and he adds:

> First of all, the beauty he sees is available to other people—and to me too. Although I might not be quite as refined aesthetically as he is, I can appreciate the beauty of a flower.
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> At the same time, I see much more about the flower than he sees. I could imagine the cells in there, the complicated actions inside, which also have a beauty. I mean, it's not just beauty at this dimension of one centimeter: there is also beauty at a smaller dimension—the inner structure. The fact that the colors in the flower are evolved in order to attract insects to pollinate it is interesting—it means that the insects can see the color. It adds a question: does this aesthetic sense also exist in the lower forms? Why is it aesthetic? All kinds of interesting questions which a science knowledge only adds to the excitement and mystery and the awe of a flower. It only adds. I don't understand how it subtracts.
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> Does it make any less of a beautiful smell of violets to know that it's molecules? To find out, for example, that the smell of violets is very similar to the chemical that's used by a certain butterfly (I don't know whether it's true, like my father's stories!), a butterfly that lets out this chemical to attract all its mates? It turns out that this chemical is exactly the smell of violets with a small change of a few molecules. The different kinds of smells and the different kinds of chemicals, the great variety of chemicals and colors and dyes and so on in the plants and everywhere else, are all very closely related, with very small changes, and the efficiency of life is not always to make a new thing, but to modify only slightly something that's already there, and make its function entirely different, so that the smell of violets is related to the smell of earth. . . . These are all additional facts, additional discoveries. It doesn't take away that it can't answer questions of what, ultimately, does the smell of violets really feel like when you smell it. That's only if you expected science to give the answers to every possible question. But the idea that science takes away is something I don't understand.
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> It's true that technology can have an effect on art that might be a kind of subtraction. For example, in the early days painting was to make pictures when pictures were unavailable, that was one reason: it was very useful to give people pictures to look at, to help them think about God, or the Annunciation, or whatever. When photography came as a result of technology, which itself was the result of scientific knowledge, then that made pictures very much more available. The care and effort needed to make something by hand which looked exactly like nature and which was once such a delight to see now became mundane in a way (although of course there's a new art—the art of taking good pictures). So yes, technology can have an effect on art, but the idea that it takes away mystery or awe or wonder in nature is wrong. It's quite the opposite. It's much more wonderful to know what something's really like than to sit there and just simply, in ignorance, say, "Oooh, isn't it wonderful!"

A famous poem by Walt Whitman tells how he listened to a "learn'd astronomer" lecture about the heavens until he (Walt) became "unaccountably tired and sick." He walks out of the lecture room into the "mystical moist night air" so he can look up "in perfect silence at the stars."

Here is how Feynman, in his *Lectures on Physics,* reacted to the notion that astronomical knowledge dulls one's sense of awe toward the cosmos:

> "The stars are made of the same atoms as the earth." I usually pick one small topic like this to give a lecture on. Poets say science takes away from the beauty of the stars—mere gobs of gas atoms. Nothing is "mere." I too can see the stars on a desert night, and feel them. But do I see less or more? The vastness of the heavens stretches my imagination—stuck on this carousel my little eye can catch one-million-year-old light. A vast pattern—of which I am a part—perhaps my stuff was belched from some forgotten star, as one is belching there. Or see them with the greater eye of Palomar, rushing all apart from some common starting point when they were perhaps all together. What is the pattern, or the meaning, or the *why?* It does not do harm to the mystery to know a little about it. For far more marvelous is the truth than any artists of the past imagined! Why do the poets of the present not speak of it? What men are poets who can speak of Jupiter if he were like a man, but if he is an immense spinning sphere of methane and ammonia must be silent?

Isaac Asimov, writing on "Science and Beauty" in *The Roving Mind,* quotes Whitman's poem. "The trouble is that Whitman is talking through his hat," says Asimov. Of course the night sky is beautiful, but is there not a deeper, added beauty provided by astronomy? Asimov continues with lyrical paragraphs about the "weird and unearthly beauty" of our sister planets,

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as recently disclosed by space probes, about the awesome wonders of the stars, of the billions of galaxies each containing billions of suns, of clusters of galaxies, and superclusters fleeing from each other as the universe expands from its incredible origin in the explosion of a tiny point some 15 billion years ago.

> *And all of this vision—far beyond* the scale of human imaginings—was made possible by the works of hundreds of learn'd astronomers. All of it; *all* of it was discovered after the death of Whitman in 1892, and most of it in the past twenty-five years, so that the poor poet never knew what a stultified *and limited beauty he observed* when he look'd up in perfect silence at the stars.
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> Nor can we know or imagine now the limitless beauty yet to be revealed in the future—by science. □

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damage or casualties, struck on this date, it was hailed as a fulfillment of the prophecy. The last we checked, the world still had plenty of sin.

But don't give up on the eschaton merely because the world has survived into 1995. Leland Jensen of Missoula, Arkansas, says that he is the Second Coming and that during 1995 the earth will suffer great meteor impacts, earthquakes, and major planetary changes. Those lucky enough to survive all this will enjoy Heaven on Earth. And, according to a story in the *Washington Post* (March 12, 1994), followers of the Institute of Divine Metaphysical Research expect the world to end in an instant, by 1996. So the end may come while you are reading this page. Fortunately, even if these people are right, they won't be in a position to gloat about it!

Meanwhile, progress in the esoteric sciences has been occurring so rapidly that it's difficult to keep up. The latest miracle substance seems to be "colloidal silver," said to be "the best all-around germ fighter we have," which costs $75 a bottle. According to certain of its distributors in California, colloidal silver is "known to be effective against more than 650 diseases"—including everything from acne and AIDS to yeast infections—"without any known harmful side effects or toxicity to the body." Actually, colloidal silver is an old nostrum whose use by doctors and pharmacists was discontinued after 1938, when the FDA mandated that drugs be proved "safe" and "effective." Other "alternative practitioners" offer such exciting elixirs as "ghost gold," said to consist of "orbitally rearranged monoatomic elements" that not only cure disease but restore your DNA to "its perfect state."

And a new system of personality assessment bids fair to displace horoscopes, at least for women: *lipstick analysis,* the determination of personality types by the shape of their pocket lipstick. According to a story in the *Milwaukee Journal* (August 14, 1994), Cynthia Christ of Sensa Cosmetics in Houston, Texas, has discovered how eight different personality types are reflected in the tilt of their lipsticks. If the tip is rounded to a point, its owner is "lovable," "family-oriented," and "needs people around." A sharp-angled tip is the mark of one who is "opinionated," "high-spirited," and "argumentative," while a flat top that is concave indicates one who "makes friends easily," is "inquisitive" and "exciting," and "makes a great detective." Reporter Lois Blinkhorn did her own little informal survey of her co-workers and found that their lipsticks matched their personalities amazingly well. "Lipsticks don't lie." □