

philippine studies

Ateneo de Manila University • Loyola Heights, Quezon City • 1108 Philippines

Science in the Boondocks, by Calleja

Review Author: Queena N. Lee-Chua

Philippine Studies vol. 48, no. 2 (2000): 278–280

Copyright © Ateneo de Manila University

Philippine Studies is published by the Ateneo de Manila University. Contents may not be copied or sent via email or other means to multiple sites and posted to a listserv without the copyright holder's written permission. Users may download and print articles for individual, noncommercial use only. However, unless prior permission has been obtained, you may not download an entire issue of a journal, or download multiple copies of articles.

Please contact the publisher for any further use of this work at philstudies@admu.edu.ph.

<http://www.philippinestudies.net>
Fri June 27 13:30:20 2008

Science in the Boondocks and Other Essays on Science and Society. By Gode B. Calleja. Manila: Kalikasan Press, 1987. 215 pages.

What would you think about a Biology examination that revolved around the following questions:

1. Discuss the second law of thermodynamics as it pertains to Biology.
2. Is there life after death? after marriage?
3. If you find either question unintelligible, ask a better one.

Or a Biology class where lectures were occasionally done "under the trees or out in the sun or up in the mountain, [where] poetry was read, the girls could bring their boy friends, guitar-playing was allowed, even encouraged, and taking down notes was discouraged"?

Or a Biology class where the students were all promised grades of 1.0 (the highest grade in the University of the Philippines), and where that promise was fulfilled?

Experimental and theoretical biologist Gode B. Calleja details his experiences as a professor in the irreverent yet passionate article "To Teach Biology" (which first appeared in the journal *Biota* in 1972). In this six-unit course (two one-hour lectures and one three-hour laboratory period a week for one academic year), Calleja debunks the traditional classroom-rote-lecture method in favor of the "open class," where lecturers (such as Dr. Gemino Abad of the English Department of UP Diliman, Dr. Emerita de Guzman of the Department of Agricultural Botany of UP Los Baños, and Dr. H. B. Calleja of the American Heart Clinic, Makati Medical Center) talked about Teilhard de Chardin, the heart as a biological phenomenon, differentiation, the programmed cell, Mendel, ecology, and death.

Taking down notes was discouraged "in favour of listening and thinking. I don't like to think of students as simply clerks and stenographers. And no one was compelled to listen to the lecturer nor to attend classes. I don't believe in treating college students like punks. The moment you treat them like punks, they behave like punks. And I insist that learning can be and should be fun. Biology is fun. Learning is optional."

How about the exams? "The final exams were not attempts to find out exactly what the students had learned. Rather, they were attempts at conversation. Just like previous questions I had been asking them, such as: what have you thought of lately? Or, what books have you been reading lately?"

As for perfect grades, "[Giving them 1.0] was a way of making them take an optimistic stock of themselves. It was designed as an opportunity to make themselves better. It was also a challenge for me to try harder. For then, I told them, I would see to it that they deserved their grades. If I failed to make them deserve the grade I gave them, then the failure is mine. And should not

be passed on to them. And I willingly bear the consequences—the reproach of the critics. And the loss of a job.”

Of course, Calleja was not allowed to handle Introductory Biology after this experience. Yet this did not deter him from frankly jotting down his observations and insights about a number of issues, controversial then and now, including:

- The population explosion (“If celibacy is even considered a holy state by those who preach Hebraic law which calls for reproduction, then why must limiting birth be wrong? It looks like parenthood must be a haphazard game to be moral. I cannot agree. The number of children in a family must not be left to the Almighty or to chance, but must be a parental decision.”)
- Death and the survival of the fittest (“The fitness of the environment must be preserved for man’s needs. So must we preserve the monkey-eating eagle and the tamaraw? But not at the expense of the people. But why shouldn’t we kill people? What is wrong with killing people? Didn’t the Holy Office and the Inquisition kill people? Shouldn’t we drown those who are witches? Shouldn’t we burn heretics at the stake? Shouldn’t we kill those who do not worship our gods? Those who do not believe in our way of life? Do not other forms of life kill members of their own kind? Let the fittest alone survive! There is no satisfactory answer here. I can only venture and answer lamely: because most of us do not want to get killed. I don’t want to get killed. Only a few of us want to die before our time. And most of us are afraid of dying even as all of us know that all of us must die and will die. And because we want to live.”)
- Abortion (“A foetus is not a person, not yet. It is a wondrous parasite worthy of love—a parasite nevertheless. Unlike a baby, it is an integral bodily part of a woman. Its life is the bearer’s life. Its survival depends on the bearer’s blood and bones and love and health. So long as a foetus remains a foetus and is not a baby, its right to life is completely dependent on its bearer.”)
- Publications in science (“The object of publication is not merely an ego trip on the part of the scientist. Although, personally, publication is an ego trip. The scientific community demands publication so the news report can be evaluated fairly, so a new theory can be tested, a new observation publicly recorded, a new species validated, an experiment repeated by the skeptical for verification. When the news report is confirmed and verified, it ceases to be read. The so-so-novel does not excite the scientist. There is a difference between science and belles lettres or philosophy or social science or organised religion. The classics of science are not read by today’s scientists.”)

They are read by scholars of the history of science. They are invoked, but it's their interpreters who are read. Science is ruthless. It gets the best from its geniuses and then drops them. The great bulk of *The Origin of the Species* and the *Principia* goes to the trash can for the school men to pick up and nitpick.)"

Bold assertions pepper the essays in this slim volume—statements which have both proponents and detractors. However, much as I have reflected on these issues and have reached a personal stance on them long ago (I am pro-birth control, anti-abortion, and lover of science classics, for instance), I found myself reflecting on them again, and noting in several instances that Calleja does indeed make provocative arguments. At the very least, his essays are entertaining.

I have three favorite essays in the book. In the delightful "The *Tao* of a Fission Yeast," Calleja uses the I-Ching to delineate the reproductive cycle of the yeast. In "Harnessing the Microbe," his sweepingly beautiful prose on microbes (bacteria, viruses, and so on) calls to mind Lewis Thomas' *The Lives of a Cell*. Witness his closing plea for the misunderstood microbe: "Rather than exploit people, let us exploit the microbe. Its full power for good or evil may yet be unleashed in global biological warfare or in a technological awakening. Agent of death and life, it awaits to be studied, understood, tamed, harnessed, used, even loved."

In "Science in the Boondocks," Calleja describes the history of Philippine science from ancient to modern times, weighs Filipino discoveries with those of other countries, summarizes local published authors, local journals, even GNP data. In all fronts, we come out sorely lacking, indeed. As one who cares deeply about Filipino science, I echo his cry: "Philippine science is in a very wretched state. More wretched than our politicians, reared in the art of deception, would care to admit. More wretched than I was at first willing to concede. The wretchedness is almost complete, the realisation overwhelming."

The only consolation I derive is that his data are now quite dated, and I believe local science (in terms of government support, education, international links, media exposure, and so on) is slowly making some headway. I would like to see Calleja update his book to reflect more current events.

I have not found a local science book as thought-provoking as this in quite a while, and hope it gets reprinted. I would recommend this not only for scientists, students of science, or historians of science, but also Philosophy and essay students and teachers—indeed, anyone who loves his or her beliefs challenged. If anyone dares question Calleja's credentials, let me cite them here: Calleja has trained in various research centers such as Ohio State, Minnesota, Princeton, Woods Hole, Ottawa, Los Baños, and Diliman. He is the author of *Microbial Aggregation* (CRC Press, Boca Raton, Florida, 1984), and of more than 100 other scientific items, such as book chapters, reviews, articles

in international journals such as *Journal of Theoretical Biology*, *Archives of Biochemistry and Biophysics*, *Molecular and General Genetics*, *Journal of Bacteriology*, *Experimental Cell Research*, *Biochemistry International*, *Experientia*, *Plant and Cell Physiology*, *Archives of Microbiology*, and *Genetical Research*.

Queena N. Lee-Chua
Math Department
Ateneo de Manila University

Pinoy Television: The Story of ABS-CBN. Edited by Thelma Sioson-San Juan. Quezon City: ABS-CBN Broadcasting Corp. 1999, 208 pp.

A visually stunning book that is fascinated more by the phenomenon of television than its process, ABS-CBN's *Pinoy Television: The Story of ABS-CBN* is the glossy, concise history of local television as distilled through the ABS-CBN experience. It is many things all at once, and it is important to note early that it is not everything. *Pinoy Television* is not a warts-and-all profile of the country's largest media corporation. Leave that to other authors and other books.

Instead, *Pinoy Television* is an exultant combination of many things: part Lopez family biography, industry archive, literary anthology and ode to the company, but for the most part, a pleasant, informative read as well as an important resource book. It just might be, despite inborn limitations, the most significant Filipino book on television in the recent past.

"Now, TV is the most pervasive, most influential instrument of mass communication—our shaper of dreams and imaginations, our maker of myths. TV is top voyeur, fearless eyewitness, town crier and gossip. TV commiserates in our sorrow, shares our joy, acts as our jury, judge and executioner. TV connects us to the world in real time, and disconnects us from our humdrum selves during airtime," writes Enrico Santos, immediately and accurately defining television's power and reach in the present time and place.

Thoroughly researched and well-written, *Pinoy Television* offers reader-friendly profiles of ABS-CBN players such as Geny Lopez, Gabby Lopez, and Freddie Garcia. It reconstructs the company's own life story, tracing how, as the television industry was in its infancy, the Alto Broadcasting Corporation and the Chronicle Broadcasting Network (see those initials?) eventually became the media giant that it is today.

Pinoy Television divides television's history into four parts: from its birth (1953 to 1972), the turmoil of martial law (1972 to 1986), the expectant time of EDSA, and the future. The book presents an illuminating portrait of the

Originally published in the *Philippine Daily Inquirer*, 15 May 2000.