

## A FORGOTTEN SUBGENRE: THE *NOVELA CIENTÍFICA*

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The purpose of this study is to present a subgenre of Spanish literature, the «novela científica» of the last third of the nineteenth century. The «novela científica» was not part of the naturalistic movement in contemporary literature but rather used the novel to present contemporary science to the non-scientist. Although a separate development, the «novela científica» has a greater kinship with the adventure romances of Jules Verne than with the naturalistic novel.

The novels I shall discuss in the essay are Tirso Aguimana de Veca's *Una temporada en el más bello de los planetas* (1870-1871), Pedro de Novo y Colson's *Un marino del siglo XIX o Paseo científico por el océano* (1872), Segismundo Bermejo's *El Doctor Juan Pérez* (1880), and Juan Giné y Partagás's *Un viaje a Cerebrópolis* (1884), *La familia de los Onkos* (1888), and *Misterios de la locura* (1890). The novels by Bermejo and Giné y Partagás were advertised at the time of publication as «novelas científicas». Aguimana de Veca and Novo y Colson similarly manifested a keen interest in technological progress and rational scientific methods.

Tirso Aguimana de Veca's *Una temporada en el más bello de los planetas* was published as a serial novel in the *Revista de España*,

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<sup>1</sup> For a fuller discussion of this work and of its date of composition, see Brian J. Dendle, «A Romantic Voyage to Saturn: Aguimana de Veca's *Una temporada en el más bello de los planetas*», *Studies in Romanticism* 7 (1968): 243-47 (slightly

1870-1871; it was written, however, in 1847 or 1848<sup>1</sup>. The novel relates a voyage by balloon to the planet Saturn in 1822 by a German scientist and a young Spanish friend; on Saturn, the earthlings are guided by a Saturnian scholar. *Una temporada* contains a wealth of astronomical detail. Scientists seek confirmation of hypotheses in facts; in matters beyond our senses, argument must be by induction and analogy. Medicine is a science, not an art; knowledge of man is to be obtained by dissection and analysis of the cadaver, a study «ayudado siempre del cálculo y de la física». The key to all life is electricity, «el alma del universo». Temperament and behavior depend on electrical polarity; electricity explains love, antipathy, the power of leaders, genius, and criminality.

As in much utopian fiction, the description of the customs of another planet enables the author to offer an implicit criticism of terrestrial ways. The Saturnians are considerate of others, avoid alcohol, have admirable hospitals and an efficient, honest civil service, and provide elementary education for all: Religious belief, if only in the form of acknowledgment of the deity, is considered by enlightened Saturnians as an instinctive sentiment necessary to preserve society and to restrain evil passions. Violent change must at all cost be avoided.

Despite the novelty of its setting and its concern for enlightened scientific and social progress, *Una temporada* fails to exploit the possibilities of a non-terrestrial setting. The style is pedestrian; the heavy didactic element is barely connected with a novelistic intrigue of considerable banality; the characters are lifeless. Aguimana cannot escape the limitations of a Romantic medievalism. His Saturnians, despite their technological progress, live in an archaic world of knights on horseback, tournaments, duels, feudal castles, secret passages, and the code of honor.

Pedro Novo y Colson (1846-1931) was a naval officer who saw active service during the Cuban, Carlist, and cantonalist insurrections. He was a successful dramatist and the author of notable

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revised version); «Spain's First Novel of Science Fiction: A Nineteenth-Century Voyage to Saturn», *Monographic Review/Revista Monográfica* 3 Nos. 1-2 (1987): 43-48. Edgar Allan Poe had previously satirized tales of extraterrestrial travel by balloon in «Hans Phaall, a Tale» (1835; French translation, «L'Aeronaute Hollandais», 1853).

works of maritime history (among others: *Historia de las exploraciones árticas en busca del paso del nordeste*, 1880; *Historia de la guerra de España en el Pacífico*, 1882). He was a member of the Real Academia de la Historia and the Real Academia Española. His novel *Un marino del siglo XIX o Paseo científico por el océano*, composed while he was a naval ensign, enjoyed considerable success and was published in Madrid in three editions: T. Fontanet, 1872; M. Tello, 1879; M. Tello, 1882<sup>2</sup>.

The originality of *Un marino del siglo XIX* was immediately recognized. The historian and naval officer F. Javier de Salas declared in the Prologue that *Un marino* belonged to «un género nuevo de literatura útil e instructiva» (p. 24). The novel was favorably reviewed in *La Época* by Eusebio Blasco, in the London *Times*, and in various New York newspapers. In the preface to the third edition, Novo y Colson declared his work to belong to a different genre from that of Jules Verne's novels: he eschews «la lucha dramática como resultado del choque de caracteres»; there are no female characters; the interest of the novel lies entirely in «la parte científica» (pp. 31-32). Jules Verne falsifies science to produce «extraordinarias y absurdas combinaciones» (p. 33).

*Un marino del siglo XIX* relates the voyage of two well educated young Englishmen in the company of their uncle Roberto Rodnalsón [sic] to Cape Colony and Hong Kong. The fifty-year-old Roberto had been sent to sea in his youth to reestablish his ailing health. He had now spent thirty years on the ocean, exploring the globe and conducting scientific experiments. His magnificently appointed steam yacht contains a fine library and laboratory. The crew of sixty sailors and officers are well-disciplined, skilled at their tasks, and devoted to Roberto. The sailors' happiness is the natural result of «una vida sencilla y laborioso» (p. 74).

The Rodnalsóns begin their voyage of pleasure and scientific discovery on 1 January 1870. During their travels, Roberto instructs his nephews on astronomy, navigation, the use of nautical instruments, meteorology, cosmogony, geology, climate, oceanography, the geography of the West African coast, sharks, the Gulf Stream, the sea birds of the South Atlantic, oceanic phosphorescence, and hurricanes. The novel is remarkable for the encyclopaedic detail of its

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<sup>2</sup> References to *Un marino del siglo XIX* in the present article are to the third edition.

scientific explanations, presented in a crisp, rapid style. Conventional novelistic conflicts are lacking. The shipmates live in perfect harmony. Excitement is provided not by a clash of characters but by man's struggle with nature. Save for a description of the Moroccan littoral and an acknowledgment of the model colonialism of the British in Hong Kong (p. 459), Novo y Colson confines his account to observations of maritime phenomena. Religious pieties play only a minor role in the scientific exposition; the presence of God is realized in the infinity of sea and sky (p. 80) and by prayer in moments of danger (pp. 403, 454).

Segismundo Bermejo (1833-1899), a widely-traveled career naval officer and teacher at the naval college, was a specialist in torpedoes, served as Minister of Naval Affairs (1897-1898), and wrote numerous scientific and professional articles. He was the author of a «novela científica»: *El Doctor Juan Pérez* (Barcelona: Sucesores de N. Ramírez, 1880; 175 pages). In an introductory page, Bermejo declares the goal of his novel to be moral education: The novel is followed, like those of Giné y Partagás, by a Vocabulary of Scientific Terms.

From the outset, the novel presents the reader with «un suceso extraordinario»: the discovery, on the cold morning of 2 January 1868, in a pine grove near the road from Chiclana to San Fernando of two mutilated corpses, «atados a un pequeño barco y envueltos en pedazos de tela». The mysterious nature of the find is presented directly and factually in the conversation of *guardias civiles* and in police, judicial, and medical reports. The vessel containing the corpses is of light weight, has three cylindrical gas containers and the remnants of bat-like wings, made of finely-spun cloth (p. 12). Among the objects found in the wrecked vessel are a diary and newspaper written in hieroglyphics.

We are now introduced to Doctor Juan Pérez, a retired military doctor devoted to scientific investigation. Pérez's scientific reasoning, his interest in cosmogony, and his understanding of God's creation of the universe, described in the Book of Genesis, convince him that the mysterious corpses belong to travelers from another planet.

Dr. Pérez deciphers the journal of the astronauts, from one of the moons of Mars, the planet Vesta. The astronauts had died asphyxiated when their electrically-powered «aereóstata», intended

for meteorological observations, had risen too high above an electrical storm.

Vestan science is more advanced than that of Earth. Vestan technology provides an electrical defense system against flying machines, cheap artificial jewelry (to prevent women wasting capital on adornment), medicinal herbs, atomic weights and measures, interplanetary telegraphy, and the application of logarithmic theory to capture solar energy.

However, the study of the inhabitants of Vesta offers Pérez only «nuevos desengaños», confirmation that humanity is «esclava siempre de sus pasiones» (p. 115). Vestan moral progress does not match its scientific advances. Vestans, racked by social divisions, pursue the «fantasma... que se llama Felicidad» (p. 127). The Vestan documents stress the need for education in hygiene, intellectual matters, and religious morality to preserve society from disorder.

Despite a taut beginning, *El Doctor Juan Pérez* is irremediably flawed by the ponderous presentation of undigested scientific data. Thus, Dr. Pérez quotes at exhaustive length and with considerable technical detail from contemporary French and Belgian learned journals on the feasibility of air travel, whether in heavier-than-air machines or in craft drawn by powerful birds, on Biblical cosmogony, and on evolutionary theory.

Juan Giné y Partagás (1836-1903) was a psychiatrist and medical educator of distinction. He founded the Instituto Médico of Barcelona in 1865, became director of the Manicomio Nueva Belén de San Gervasio (Barcelona) in 1873, and occupied the chair of surgery at the University of Barcelona. Giné y Partagás published numerous books on medical matters, covering such topics as surgical anatomy, dermatology, venereal diseases, and phrenopathology. He publicized the use of antiseptics in surgery and was an authority on clinical and forensic psychiatry.

Giné y Partagás's first excursion into fiction was the curious *Un viaje a Cerebrópolis*, published in Barcelona in 1884. A second edition was published by the Librería Médica Nacional y Extranjera de Juan Güell (Rambla Canaletas, 11, Barcelona) in 1906. *Un viaje a Cerebrópolis* defies generic definition. Relatively brief (114 pages), both fanciful and «scientific», without trace of a novelistic plot, *Un viaje a Cerebrópolis* consists of the exposition by various faculties (senses, virtues, vices) of their functions in the city of Cerebrópolis

and of the dangers which afflict the city (apoplexy, melancholia, insanity).

Giné y Partagás's next work, in similar vein, but much longer (249 pages), was *La familia de los Onkos* (Barcelona: Librería Médico-Quirúrgica de D. Jacinto Güell, 1888), «novela o fantasía humorística de carácter clínico».

The setting of *La familia de los onkos* —the cities of *Itis* and *Oma*, on the island of *Trauma*, in the empire of the centaur Chirón— is horrifying:

... dos grandes cordilleras de montañas, pobladas de maleza, abundantes en barrancos, precipicios y negras cavernas en donde se albergan las más horribles alimañas. *Gangrenas* de enormes escaras, áridas o infiltradas de jugos putrefactos; asquerosos *Esfacelos*, de aspecto de pulpos blancos, fuertemente adherentes y con larguísimas melenas impregnadas de pus fétido y sanguinolento; *Fagedenismos* hambrientos y rabiosos, de cuyas encías chorrea rutilante sangre arterial; *Algias* plañideras, que impiden el descanso y ahuyentan sin cesar el sueño, y, en fin, gigantescas *Hipertrofas*, que aplastan y quebrantan cuanto tocan o hallan próximo; ... tal es la terrible fauna que pulula en las fragosas selvas de *Itis* y de *Oma* (p. 18).

The description of the fearsome landscape is followed by an account of a revolution, the proclamation of the «República Federal de Itis» («República Inflamatoria»), presided by the «patriota jorobado» *Flemón* (the future *Absceso*).

The novel reveals throughout a contempt for Spanish surgeons and an admiration for German medicine. All Spanish doctors should learn German. The work of Virchow, Lister and Pasteur are approvingly expounded. Cancers are to be fought by surgery; microbes also might offer a future cure for cancer. Using mercuric chloride, Dr. Equimosis easily overthrows the «República Inflamatoria de Itis».

In *La familia de los Onkos*, despite the sketchiness of its plot, Giné y Partagás successfully employs fantasy (the personification of diseases) to present the various types of cancers known to medicine and current medical theories; a technical vocabulary ends the work. Striking also is a frankness of expression absent in conventional contemporary novelists.

Giné y Partagás's most imaginative creation was the «novela

científica», *Misterios de la locura*, a 340-page work published in Barcelona by Henrich y Compañía en Comandita in 1890. In the Introduction, Giné y Partagás explains that his goal is to correct commonly held «errors» that have inflicted suffering on the insane. The reader, to benefit from the work, must possess a spirit of scientific investigation and a freedom from all

«púdicos convencionalismos, propios tan sólo de adolescentes y de la gran neuropatía del sexo femenino»;

the reader is abjured:

«¡Conoced al loco, compadecedle, cuidadle y tratemos de curarle!»

The novel begins in the first person, with the «Memorias de Ultrafrenia». The «narrator» describes the city in which resides (the brain), and the activities of the various senses, as perceived from the «I» within the brain.

In the immediately ensuing chapters, the «rational narrator», Eulogio Higiofrén, relates a more conventional biographical narrative. He briefly describes in comical vein his childhood education, his courtship of two sisters (Ángela and Rosita), and his voyeurism as he spies on Ángela's undressing and delousing of herself. His night-time courtship of Rosita in a graveyard is gruesomely interrupted when the jealous Ángela hurls a coffin and a corpse on the amorous couple.

The novel then switches to «La locura por dentro». As a consequence of Ángela's prank, the sane Eulogio Higiofrén («Yo soy Yo. Soy el *Buen sentido*, el *Sentido común*, la *Razón*, la *mente sana*», p. 57) is expelled from his home in Cerebrópolis by the excesses of the «Vesantias» («Locura»). There follows a description from within the brain of cerebral geography (the regions of «Higiofrenia», «Ultrafrenia», «Afrenia»). The cerebral globe is illuminated by the sun of «la Razón Humana». The frightful mountains and bizarre natives of «Hiperfrenia» and of «la Demencia» are described:

Imposible hacer una descripción de estos montes. Allá suben hasta tocar los cuernos de la luna; acá hay hondonadas, en que rugen las fieras de la ira y del encono; más allá mesetas, donde brincan arlequines y payasos; a la derecha, brujas

y duendes, en estrepitoso aquellarre; a la izquierda, cruces, santos, santas, vírgenes y cuadros disolventes del más acendrado misticismo, con su correspondiente dotación de azotes, cilicios e instrumentos del Santo Oficio, y por doquiera troncos viejos y secos, con una o dos ramas inflexibles, de donde penden una o más cuerdas de cáñamo, con su correspondiente nudo corredizo (pp. 70-71).

The vegetation and fauna of this savage region are similarly deformed:

Si extraña es la *Flora* de *Ultrafrenia*, no lo es menos en *Fauna*. Son casi todos los mamíferos feroces: carneros que muerden y devoran cuanto les sale al paso, incluso tigres, hienas y leones; bueyes que con el rabo, se azotan los flancos, para más o mejor enfurecerse; perros y gatos en hidrofobia congénita y permanente; ... todo causa horror y mucho espanto. Las ovejas y las cabras caminan sobre sus ubres; los corderos y cabritos chupan leche de la cola de sus madres; los mosquitos tocan la trompeta, las moscas el cornetín y las arañas la bandurria; las pulgas andan patas arriba; las abejas elaboran acíbar y vinagre en sendos panales de amianto; las avispas destilan un licor de consistencia y gusto siruposos; las gallinas y los patos echan huevos por la boca: jilgueros, pardillos, ruiseñores y canarios rebuznan como pollinos y construyen sus nidos en el mar; en cambio, los peces nadan por los montes; las tortugas y cangrejos corren tan veloces que no les alcanzaría una locomotora; razón por la cual son emblema del progreso; en fin, para colmo de contrastes, hay allá la costumbre —que también se va introduciendo en *Higiofrenia*— de, en vez de colgar a los ladrones en las cruces, colgar cruces del pecho de los ladrones. Cada ladrón, a lo menos con una cruz; de cada cruz, cuelga un juez, un escribano, un cura, ... un hombre de bien (pp. 73-74).

Numerous excellent engravings, reminiscent of the styles of Hieronymus Bosch and Gustave Doré, by the artist Pedro Eriz illustrate the geographer's descriptions of the landscapes and monstrous inhabitants of the regions of Madness.

Licentious freethinkers, slaves of sensual desires, and dreamers (a «bestial tribe» which refuses to follow the dictates of «la Conciencia») disturb Cerebrópolis. Fevers and diseases also trouble the city. Madness destroys all semblance of ordered government. The



*Junta revolucionaria* of the occupying forces of *Ultrafrenenses* proclaims anarchy:

Confusion reigns as the city falls in the power of «Alucinaciones, Ilusiones, Delirios e Impulsos» (p. 92). The hallucinations of madness are manifestly linked of the Romantic imagination and include (among other features):

1.º A las ocho de la noche, repique general de campanas, tocando la *Marcha de los difuntos*.

2.º Dos docenas de curas, muy feos, de grueso abdomen y cogote de tres repliegues, cantarán el *Dies irae*, ante un ataúd abierto, del cual se levantará una momia, con los brazos en cruz.

3.º Una docena de esqueletos ejecutará la *Danza Macabra*, al son de la gaita gallega, que tocará el demonio que gime a los pies del Arcángel San Miguel.

4.º Un embozado misterioso, echará polvos, misteriosos también, en los manjares y bebidas que se destinen al interesado. *Pitalita* cuidará de que a éste todo le sepa a carne de cementerio y a tripas de gusano.

10.º Una muchacha bonita, de catorce a quince años, irá palideciendo y encanijándose a la vista del interesado; ella le pedirá agua, y aun cuando el río estará cerca, aquí no tendrá aliento para extraer un vaso y dárselo a la niña muriente de sed.

11.º La niña le dará una rosa; el interesado irá a besarla y olerla: sus labios serán picados por espinas y sentirá olor de ruda mezclada con gangrena.

12.º Se presentará un bosque seco exornado de encinas deshojadas, de cuyas ramas muertas colgarán cuerdas de cáñamo con nudos corredizos, algunos de ellos provistos del respectivo suicida; voces de éstos repetirán: «¡cuélgate, cobarde, cuélgate!» (pp. 126-128).

The accounts of the disturbing happenings within the brain are from time to time interrupted by a further narrative which relates events as seen from a more conventional, external perspective («noticias de extra-cerebro»). An idealistic young doctor recommends that Eulogio Higiofrén, suffering from an «inhibición», be removed to an asylum where he will be cured of the «estupor melancólico» which prevents movement and reaction.

Eulogio is taken to the model asylum of Don Salvador Libe («Libe», we are informed, is the German word for «love»), located

in a parklike setting of gardens and lakes, without bars, and where the patients are not subjected to punishment. Madness is considered a sickness, not a sin or a crime.

The narrative returns to the perspective of the disturbed brain. Hellish, nightmarish hallucinations, accompanied by sensual disorientation, assail Eulogio. These are routed successively by such sedatives as sulphonal<sup>3</sup> and bromides, by hydrotherapy (forced showers), and by hypnosis. Eulogio is rapidly restored to mental calm and soon reacts normally to outside stimuli.

Eulogio spends extra time in the model asylum in order to study «la locura desde fuera». He observes the kindness with which the insane are treated, the absence of all restraint except that essential to prevent an individual's harming himself or others, the well-appointed facilities (reading and recreation rooms, gardens), the rigid separation of the sexes, and the calm which prevails at mealtimes.

Don Salvador Libe denounces with feeling the Spanish public's ignorance of modern psychiatry: those who have spent time in an asylum are treated with prejudice even after recovery; psychiatric evidence is disregarded by juries; governmental inspections of asylums are superficial and conducted by unqualified doctors.

One form of mystification scathingly attacked is religious mysticism and fanaticism. A madwoman suffers from «locura religiosa»; her excessive religiosity is, the doctor explains, the consequence of «placeres solitarios» (p. 316). The attack on religious irrationality (as opposed to Christian love of neighbor) pervades *Misterios de la locura*. The crazed inhabitants of *Ultrafrenia* parade the paraphernalia of the Inquisition and the mystics (p. 71). Belief in holy relics is treated with heavy sarcasm: «Que un sabroso salchichón de Vich, colgante de un clavo del techo de la despensa, se le antoje a uno que es el cuerpo del Iscariote que vendió al Maestro, y que a otro, donde no hay salchichón, ni clavo, ni techo, ni cosa que cuelgue, vea también el cadáver del apóstol suicida ¿qué más da?» (p. 101). Mystical devotion reveals «falta de robustez mental» (p. 110). Mystics and melancholics («las místicas y los místicos, las tétricas y los tétricos y los cobardes de ambos sexos») cannot face the sun of reason (pp. 196-197). Eulogio's devout aunts

<sup>3</sup> Sulphonal had only recently (1888) been introduced into medical practice as a supposedly harmless sedative and hypnotic. Sulphonal was later discovered to produce toxic side effects and addiction.

irrationally attribute his cure not to medical skill but to their prayers to the Virgen de los Desperfectos (p. 229). Mohammed, Calvin, Joan of Arc, and Santa Teresa («una alucinada mística», p. 304) are included in a list of famous mad persons.

In its inspired use of metaphor to convey mental derangement, *Misterios de la locura* is the most imaginative novel written in Spain in the nineteenth century. Giné y Partagás presents the world of the insane from within a diseased brain, not in the ramblings of a disturbed mind (as in, for example, an interior monologue), but in the image of a city or globe attacked by the savage forces of madness. The afflicted city or brain has lost its ability to think rationally and to interpret correctly sensual perceptions. Despite his whimsy, through the metaphor of an occupied town laid waste by the forces of unreason, Giné y Partagás impresses on the reader the concept of a troubled mind, in no way to be blamed for the sickness disturbing it from within. The diseased mind can be freed of its monsters and restored to a healthy rationality and active participation in life by the weapons of the skilled psychiatrist: drugs, hydrotherapy, and hypnosis, delivered in a supportive setting.

The «novela científica» differed from conventional novels in its scientific purpose; it was a means to educate the public in the ways of science, not a means of exploring contemporary society or human relationships. The «scientific novelists» were far from social revolutionaries: Aguilana de Veca, Bermejo, and Giné y Partagás feared anarchy; Novo y Colson recognized the need for maintaining a distance between superior and subordinate (p. 405). Only Giné y Partagás, with his frankness in sexual matters and opposition to mystical religion, challenged contemporary convention. Nevertheless, all four novelists convey a feeling of power and excitement at the advances of modern science.

The most disappointing of the novels examined are Aguilana de Veca's *Una temporada en el más bello de los planetas* and Bermejo's *El Doctor Juan Pérez*. Both novels treat extraterrestrial travel and are thus early examples of science fiction. They fail, however, to exploit the possibilities of the genre. Aguilana de Veca cannot escape the limitations of a Romantic medievalism. Bermejo, tediously reproduces lengthy technical articles and formulae; the novel degenerates into maudlin sentimentality, as the good doctor

proclaims on his deathbed the progress of humanity and recalls his saintly mother.

Novo y Colson's *Un marino del siglo XIX* is the least imaginative of the scientific novels. As an exposition of scientific knowledge in agreeable fashion, the novel more than fulfills its author's aims; unfortunately, the characters and plot lack interest. The most intriguing scientific novel is Giné y Partagás, *Misterios de la locura*, which couples medical terminology and knowledge with an extravagant fantasy. Giné y Partagás's characters are wooden; his plots, contrived for a didactic purpose, are unconvincing. Nevertheless, as an example of grotesque imaginative power, *Misterios de la locura* has few rivals in nineteenth-century fiction.