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Electro-reception – detecting electrical stimuli

In addition to their ‘lateral line’ system for detecting movement in the water, sharks also have an arrangement of jelly-filled pits on their snouts called the ‘ampullae of Lorenzini.’ Sense cells within are connected with nerves and provide awareness of weak electrical fields emitted by other organisms. This may be used for the detection of predators or prey and as a navigation aid, perhaps in relation to the Earth’s magnetic field. This sense has been discovered in many fish and other aquatic creatures, but not all have ampullae. Remarkably, the monotremes also have this sense—the long beaked echidna has 2,000 electroreceptors on its bill, while the platypus has 40,000! How could such a sense have evolved separately, and why in animals that evolutionists have long assumed to be ‘primitive’ living fossils?

Ref: <https://en.wikipedia.org/wiki/Electroreception>



Patrons

**The Immaculate Conception
St Thomas Aquinas**

**St Michael
St Bonaventure**

St Oliver Plunkett (for Ireland)

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Professor Maciej Giertych, BA, MA (Oxon), PhD, DSc

AIMS

To inform Catholics and others of the scientific evidence supporting Special Creation as opposed to Evolution, and to show that the true discoveries of Science are in conformity with Catholic doctrines on Origins.

ACTIVITIES

Daylight Origins Society is a non-profit educational organisation funded from subscriptions, donations and sales of publications.

- ❖ Publishes the periodical *Daylight* for subscribers in 20 countries.
- ❖ Operates a website at www.daylightorigins.com
- ❖ Publishes and distributes pamphlets on Origins issues.
- ❖ Provides mail-order service for literature and audio-visual material.
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Editor & Secretary: Anthony Nevard
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EDITORIAL

Questions of Rhetoric and Logic

As a student, I read a marvellous little book entitled *Straight and Crooked Thinking*¹, by psychologist Robert H. Thouless, that explained in detail “how to think clearly and avoid muddled reasoning. It exposes many dishonest tricks that are often used in argument,” using examples from politics, religion, economics and international affairs. Many of these tricks are described in a highly original and entertaining way in the article ‘Logic Fallacies’ in this issue, with the commentary provided by the late Miss Paula Haigh. As she points out, several of the examples are in fact more related to the art and skills of *persuasion* (rhetoric) rather than following valid principles of *reasoning* (logic). And there is much scope and value in exposing these fallacies in the evolution debate, as well as in other controversial topics of the day.

Monotreme mysteries

The Platypus is a fascinating enigma from Australia, apparently somewhere between reptile and mammal, and long considered as a ‘living fossil.’ But why should it have refused to evolve into a ‘proper mammal’ over millions of

¹ Revised edition by Pan Books (1953); first published by Hodder & Stoughton (1930)

years? And how could it have developed such specialised features independently? In this issue we take a look at these famous denizens of the antipodes, and their importance in the evolution debate.

Copernicus as Catholic scientist

The clergy have long been in the forefront of research in astronomy; indeed it was the Catholic Church that secured the data necessary for the correction of the Julian Calendar and Pope Gregory XIII who proclaimed its use in 1582. The fact that Copernicus, whom Dr Walsh calls “the great founder of modern astronomy,” was involved in the Galileo trial has led to some misunderstanding of his position, which it is hoped the article included here will help to clear up.

Paul Ellwanger, R.I.P.

My apologies for this very belated announcement of the passing of Paul Ellwanger of Carrollton, Texas, who died on 20th October 2015, age 93, just two days before the death of his friend Paula Haigh (reported in *Daylight* No 55, Sep 2016.). A doughty defender of Catholic Tradition, he had supported *Daylight* in the past and was a strong promoter of Paula Haigh’s writings. He founded ‘Citizens for Fairness in Education’ and drafted the bill adopted by the Arkansas legislature in 1981 calling for balanced treatment in schools on the subject of origins.²

Fr Peter Fehlner OFM (Conv), R.I.P. [20 July 1931 – 8 May 2018]

Peter Damian Mary Fehlner was American and a member of the Order of Friars Minor Conventual. As a professor of theology and leading mariologist, he focused primarily on the philosophical and theological traditions of St. Bonaventure, Bl. John Duns Scotus and St. Maximilian Kolbe. An article he wrote “In the beginning...” was published in the Jan-Feb 1988 edition of *Christ to the World* and strongly argued for the traditional interpretation of Genesis (A summary by Fr Lessiter appeared in the *CESHE:UK Newsletter* 5, Sep 1989.) He was interviewed on this subject for the first edition of Peter Wilders’ video *Evolution: Fact or Belief?* [1990] and supported our counter-evolution cause.

For further information, see https://en.wikipedia.org/wiki/Peter_Fehlner .

Please include these Holy Souls in your prayers. Thank you so much for your support. A.N.

² Referenced in Ronald Numbers, *The Creationists*, Harvard University Press (2006), p. 349

INTRODUCTION TO MR. ELMENDORF’S “LOGIC FALLACIES”

Paula Haigh [RIP]

Mr. R.G. Elmendorf (of Bairdford, PA 40056) is the only one of the non-Catholic Creationists I know of who has been willing to explore the non-empirical proofs against evolution. In this exploration, Mr. Elmendorf places himself more closely in touch with Catholic theological and intellectual tradition than any other Creationist scientist.

I am taking the liberty of annotating his “Logic Fallacies” with the traditional names of the false arguments and the rhetorical means of persuasion that he enumerates. For it should be noted that most of what he is calling to our attention is really rhetorical technique and art — not logic properly speaking. The evolutionists, since their entire ideology and basic premise is false to begin with and since, therefore, they are not “of the truth” in any sense, are not able to argue logically but must argue rhetorically. The entire basis of modern “science-falsely-so-called” being exclusively material, thereby repudiates proofs from reason and limits itself to the mere association of effects, relying thereby upon the most superficial of “reasons” for its connections between things.

Mr. Elmendorf’s catalogue of “Logic Fallacies” is proof in itself of what Aristotle says about the human mind (unless unusually corrupted by bad habits, as it is in our time) — Aristotle says: “...it belongs to the same faculty of the mind to recognize both truth and the semblance of truth; and more than this, mankind has a tolerable natural tendency toward that which is true; ...truth and justice are in their nature stronger than their opposites; ...” (Rhetoric, Chap. 1). Mr. Elmendorf is proof of the fact that an uncorrupted mind finds truth and justice more palatable than their opposites and that the uncorrupted human mind is able, by its own created natural light, to discern truth from error and from the semblance of truth. Our minds are weakened by Original Sin’s consequences but they are not corrupted except by further actual sins against reason leading to a culpable ignorance by a lazy refusal to exercise the proper habits of intellect.

Traditional logic, following Aristotle, recognizes many informal fallacies amongst which the most common are the argumentum ad hominem which is argumentation or persuasion based solely on the character or authority of the speaker — or on his sheer popularity. Obviously, such a basis of persuasion has no logical, no intrinsic connection with the truth or falsity of his views. Because a person possesses a pleasing personality is certainly no guarantee of his truthfulness. On the other hand, there is a place for the argument from authority and from character. The Magisterium of the Church, for example, is an infallible authoritative source for all kinds of truth because of Christ's promise to Peter; and great Saints and Doctors of the Church, whose work has been canonized and declared free of error by the Church — such men may be appealed to on the basis of their reputation for speaking the truth either always or with only slight and essentially unimportant mistakes (as was the case with St. Thomas on the Immaculate Conception of the Blessed Virgin Mary; for his defective knowledge of biology led him to postulate the effects of original sin in the Blessed Mother's body before animation). In any case, however, and whatever source one uses, the fact remains that the truth is accepted at least as much on the basis of that natural love of the intellect for truth — truth being its very perfection — as well as on any other, and this I think would hold true even in the case of supernatural truths of Faith which remain mysteries for the human intellect. The dogma of the Blessed Trinity, for example, is not repugnant to the intellect, nor is any other truth of Faith even though these great mysteries transcend our powers of discourse.

In matters of empirical science today wherein the data itself is particular, concrete, and unrelated by the scientists themselves to any ultimate source of truth based on Divine Revelation and Catholic tradition, it would be folly to rely upon the argumentum ad hominem. However prestigious Dr. Louis Leakey might have been and however esteemed Richard Leakey, his son, currently is, backed as he is by the terribly awesome National Geographic — what utter foolishness to place reliance upon these men who presume to tell us of man's origins while they reject, in no uncertain terms, all that the Church teaches and has always taught on this subject. And so, an appeal — any appeal to the character, the personality, the prestige or status of any scientist or expert today — must be closely examined and certainly not taken as a source or guarantee of truth.

LOGIC FALLACIES

R.G. Elmendorf

Logic fallacies (errors in thinking) are frequently used by evolutionists to avoid facing and dealing clearly with the important intellectual issues involved in the Creation/Evolution controversy.

Because evolution cannot stand up under a careful, objective examination, it must operate behind a smoke screen of logic fallacies to escape being pinned down and publicly exposed. Evolutionists characteristically **DO NOT** or **CANNOT THINK STRAIGHT!**

Creationists should be careful to avoid these same errors in thinking in their efforts to promote the creation position. Logic fallacies do not contribute to resolution of the issues but only serve to divert attention, delay progress, and damage science's reputation for objective, logical thinking in the search for truth.

1. POPULARITY CONTEST



Credibility determined by appearance, personality, showmanship or eloquence, rather than by objective validity of information presented. Bias towards "famous" people, handsome 'Hollywood types', sales and political personalities.

Related to MAJORITY VOTE, CREDENTIALS COMPETITION, NON-REASON.

2. BEAN BALL



Inability to separate people from ideas, resulting in a personal attack on an individual, rather than objective consideration of ideas.

Related to IRRELEVANCE, NON-REASON, DISTORTION, COERCION. INSINCERITY.

Aristotle distinguishes three main means or modes of persuasion in the art of rhetoric and he further distinguished rhetoric proper from sophistry or sophistical reasoning which latter intends to deceive. The three modes of persuasion are:

- 1) Those based on the personal character of the speaker who (rightly or wrongly) presents himself as an honest and upright person;
- 2) Those based on the emotions of the addressee;
- 3) Those founded in the speech itself — its inherent logic, its science judged in relation to reality; or the rhetorical influence of its style.

Mr. Elmendorf's "Bean Ball" fallacy is one based on the appeal to emotion and seems to be essentially sophistical — intending to deceive by means of smear tactics, the lowest form of rhetoric.

3. SLOPPY SEMANTICS



Careless use of words, imprecise terminology and disorganized format, resulting in obscure or ambiguous meaning.

Includes EQUIVOCATION (use of multi-meaning terms, often with intent to deceive - evolution as "change"), FUZZIFYING (vague, indeterminate meaning).

Related to FANCY WORDS, STALLING, DISTORTION.

“Sloppy Semantics”, intended or unwitting, is that fallacy known as equivocation and can be caused by single words or by grammatical construction, or both together. The daily newspaper and most magazines are happy hunting grounds for such fallacies and ‘journalese’ is but another name for what Mr. E. so aptly terms “Sloppy Semantics” — covering a multitude of sins indeed.

4. IRRELEVANCE



Misapplication of facts or information, mixing incompatible issues, bringing in extraneous items, detouring into unrelated areas.

Including FALSE ISSUE (“science vs religion”), FALSE ANALOGY (what applies “there” does not necessarily apply “here”), MISPLACED CAUSE (blaming a black cat for misfortune), MANY QUESTIONS (combining multiple issues).

Related to BEAN BALL, STALLING, DISTORTION, CROOKED THINKING.

Traditional logic terms these fallacies: Fallacy of Accident, Fallacy of the Relative to the Absolute, Fallacy of Ignoring the Issue, Fallacy of Begging the Question, Fallacy of the Consequent, Fallacy of the False Cause, Fallacy of the Non Sequitur, all of which belong to sophistical reasoning, though I suppose people arguing thusly could be sincere.

5. MAJORITY VOTE



“Truth” is equated with “popular opinion”. Based on the assumption that the “majority” is always right.

Includes POLL FEVER (determining fickle public mood, rather than meaningful private commitment).

The “majority” would be always right if leaders were always honest and just. The majority of people, the common man, the ordinary citizen, are led astray too easily by appearances of the good, such as come over the TV in advertising, and by failure to cling to higher truths of Faith and of Reason, such as Catholic moral teachings in the finer points of morality and to the natural law in such matters as the murder of abortion. It is within the power of every human being to resist mass manipulation — if the will is there to do so. But this is a typically democratic fallacy wherein the weakness of human nature, its vulnerability to manipulation, is exploited to the fullest degree possible.

6. GUESSING GAMES



Free conjecture and speculation on things not accessible to scientific observation and confirmation. Fabrication in place of facts, scenario-writing in place of science.

Revealed by use of terms like: “may have”, “quite possibly”, “we may guess”, “it would seem”, “if we assume”, “it is believed”, “probably”, etc.

Includes EXTRAPOLATION (projecting a trend of limited, known data into the unknown), FAIRY TALES (imaginative flight into an unreal, fantasy world).

Related to NON-REASON, FACTS GAP.

All of our readers will note, I am sure, that this is the principal basis of the evolutionary myth: sheer imaginative speculation. [See the critique of **Dr. Henry Morris** on the Time magazine evolution issue, in the Catholic Creationist of February, 1978, or Acts & Facts, January 1978)

This is primarily a fallacy in the speech itself, since the use of guessing terms betrays it, but its source is, of course, in the speaker, his intent to persuade (or to deceive) and in his reliance upon the ignorance and/or credulity of his addressee whom he is swaying, in addition, by the prestige of his own character (rightly or wrongly, truly or falsely).

7. CREDENTIALS COMPETITION



An appeal to authority (“experts”, “professionals”, “specialists”, “scientists”, etc.) rather than an appeal to reason.

Includes PhD PHOBIA (credibility determined by “credentials”), PRESTIGE POWER (“if it is in Scientific American, it must be so”), WHITE COAT WONDER (awe of “science says”).

Related to POPULARITY CONTEST, BLUFFING, COERCION.

Obviously, coming in—justly—for this kind of satire from Mr. Elmendorf, you can see to what extent the error of evolution, pushed by scientists who should know better, is contributing to a massive contempt for the discipline itself and does not bode well for its future.

8. FANCY WORDS



"austeroxipatelicozux"

Unnecessary use of big words and “prestige” jargon solely to impress and not to clarify.

Includes CODE WORDS (language of the inner circle), RHETORIC (elaborate language used for style or effect without regard to content), BOMBAST (pretentious, high-sounding “stuffed” words — Cf. 2 Peter 2:18)

Related to SLOPPY SEMANTICS, BLUFFING.

9. STALLING



Unwillingness to be pinned down, face the issue, answer questions, or reply to a challenge.

Includes FILLIBUSTERING (monopolizing the time and communications media to prevent consideration of an opposing view), AGNOSTICISM (refusing to choose), PREVARICATION (evading the truth by shuffling or quibbling), THE BRUSH-OFF (refusal to grant a hearing), LAUGH-IT-OFF (treating a serious matter as a joke).

Related to SLOPPY SEMANTICS, IRRELEVANCE, REPETITION, SUPERFICIALITY.

Also includes all such fallacies as ‘Begging the Question’, ‘Assuming that which is to be proven’, ‘Inconsequences’, etc., all of which are ruled out of Law Courts in legal debates. (Cf. Norman Macbeth, Darwin Retried, wherein evolutionary assumptions are examined from this point of view, the legal one, and found entirely wanting.)

10. NON-REASON



Appeal to subjective emotions rather than objective reason. Neglect of propositional “downstairs” truth.

EXISTENTIALISM (appeal to “feelings”).

Related to POPULARITY CONTEST, BEAN BALL, GUESSING GAMES, CROOKEDTHINKING, SUPERFICIALITY, CLOSED MIND, FACTS GAP, COERCION.

11. REPETITION



Needless overworking of words and ideas to sway and manipulate public opinion. A common advertising and propaganda technique.

Includes TAUTOLOGY (saying the same thing over again in different words without any progress in thinking), MANYWORDS (mere volume of words without meaningful content).

Related to MAJORITY VOTE, STALLING, DISTORTION.

12. BAD START



False premises and mistaken presuppositions – the situation when the starting assumptions are already incorrect. (Going from bad to worse.)

Related to FACTS GAP.

13. DISTORTION



Using various techniques to twist the truth and distort its meaning. Results in misrepresentation, inaccuracies, unfairness, loss of objectivity.

Includes JUGGLING (of “news” by timing, placing, heading, illustrating, cutting, repetition, etc.), ZOOMING (selective coverage by audio-visual tricks), FALSE QUESTION (a question which is really a statement in disguise – “have you stopped beating your wife?”), ACCENT (stressing one word or another to change meaning), QUOTING OUT OF

CONTEXT (using an un-representative fragment of a picture).

Related to BEAN BALL, SLOPPY SEMANTICS, IRRELEVANCE, REPETITION, SUPERFICIALITY, INSINCERITY. (Also known as various forms of Rhetorical accent and emphasis.)

14. CROOKED THINKING



Illogical intellectual wandering, instead of organized, logical, straight thinking.

Includes CIRCULAR REASONING (assuming the conclusion as a premise), NON-SEQUITUR ("it does not follow" – an irrelevant conclusion), ZIG-ZAG THINKING (frequent change in direction of reasoning), SIDEWAYS THINKING (unjustified shift to new, unrelated topic), LEAPFROGGING (jumping over the next logical step to get to something else).

Related to IRRELEVANCE, NON-REASON.

15. SUPERFICIALITY



Impatience and unwillingness to carefully and thoroughly examine an issue ("I don't want to look at the fossils"). Jumping to a conclusion on the basis of superficial plausibility or appearances. "Facts are boring, feelings are exciting" attitude. Inability to handle lengthy or "heavy" material. Typical of radio and TV talk-shows and other time-critical formats.

Related to STALLING, NON-REASON, DISTORTION, BLUFFING.

16 CLOSED MIND



Arbitrary decision of the will, rather than a logical conclusion of the intellect. A position determined by irrational or philosophical choice rather than by scientific information (true science) (e.g. Copernicanism).

Includes PRECONCEIVED NOTIONS ("don't bother me with the facts – my mind is made up!"), FORCED CHOICE (from arbitrarily restricted alternatives).

Related to NON-REASON, FACTS GAP.

17 BLUFFING



Pretended knowledge or feigned authority regarding subject matter.

Includes BIG MOUTH (outshouting the opposition), FAKING (bold claims which cannot be substantiated), RAZZLE-DAZZLE (playing fast-and-loose with information).

Related to CREDENTIALS COMPETITION, FANCY WORDS, SUPERFICIALITY, COERCION, INSINCERITY.

18. FACTS GAP



Leaping across a gap in knowledge when there is insufficient information available to reason logically.

Exemplified by: "If evolution has not been disproven, it must be true" (used by evolutionists), and "If evolution has not been proven, it must be false" (used by Creationists).

Related to GUESSING GAMES, NON-REASON, BAD START, CLOSED MIND.

19. COERCION



Use of intimidation or threat of penalty to force acceptance of an idea, rather than appealing to objective reason. "Might makes right".

Related to BEAN BALL, MAJORITY VOTE, CREDENTIALS COMPETITION, NON-REASON, BLUFFING, INSINCERITY.

(Also noted in persecution of Creationist scientists in the secular universities – and in Catholic ones, also.)

20. INSINCERITY



Not conducting a genuine search for truth, but only seeking political or propaganda advantage.

Related to BEAN BALL, DISTORTION, BLUFFING, COERCION.

Note from the *Daylight* Editor

This article was an invaluable resource for me back in the early 1980s when I prepared a series of five lessons and discussions with Sixth Formers as part of their Religious Studies course at St Columba's College. We looked at four 'fallacies' in each lesson, together with other aspects such as bias, prejudice and objectivity. We taught six small groups in rotation. My notes were typed on a manual typewriter and copies for students printed by spirit duplicator! AN

AFTERWORD BY PAULA HAIGH

As is evident from Mr. Elmendorf’s catalogue and his comments, many fallacies in thinking are due to faults of character and can even be actual sins. Aristotle recognized this and because of it devoted quite a large portion of Book II of his Rhetoric to a discussion of the passions. Only scientific discourse, properly speaking, appeals directly to the intellect. It is the essence of rhetorical discourse, including sophistical discourse and propaganda, to persuade by appealing directly to the emotions and to the unreflective “common sense”, the unexamined sloganized, platitudinous surfaces of the mind. It can become a matter of morality, of virtue or of vice freely chosen. For this reason, it certainly behooves us to exercise our God-given minds and to practice the intellectual virtues in order to better dispose our minds for the development and full operation of the Gifts of the Holy Spirit. (Cf. ST, I-II, Q 57 on the Intellectual virtues and Q 68 on the Seven Gifts of the Holy Ghost in the Summa.)

A culpable ignorance can result from intellectual sloth. Fr. Garrigou-Lagrange (in Three Ages of the Interior Life, Vol. I, page 308) points out that:

“Pious people are often not sufficiently attentive to sins of ignorance, which they sometimes commit without considering, as they can and ought, their religious duties or the duties of their state, ... We are responsible not only for the inordinate acts that we place, but also for the omission of all the good that we ought to do, and that we would accomplish in fact if we had true zeal for the glory of God and the salvation of souls.”

The above remarks are offered mainly in connection with the sins of ignorance — sins against reason and against Faith — which easily occur today because of the continuous and pervasive assault upon the natural mind, by error and perversion, and upon divine Faith by enemies within the Fold of the Church. Awareness of some of the propaganda techniques in use are pointed out by Mr. Elmendorf in a manner most easy to grasp. More on this same subject is offered in the essay on Science and Proof. [*by PH in the same issue – Ed.*]

“In every sin, reason is corrupted in the sense that every bad person is in some way ignorant.” St. Thomas Aquinas, Commentary on St. Paul’s First Thessalonians, 5-2.

Before leaving Mr. Elmendorf’s “Logic Fallacies” two of the most outstanding sins of the evolutionists against reason should be pointed out.

The first is Tautology (See no. 11: REPETITION.)

Norman Macbeth (Darwin Retried, page 47) puts it this way:

If we say that evolution is accomplished largely by natural selection and that natural selection consists of differential reproduction, what have we done? Differential reproduction means that some species multiply by leaving more offspring than one-for-one, while others leave one-for-one and remain stable, and others leave less than one-for-one and dwindle or die out. Thus we have as Question: Why do some multiply, while others remain stable, dwindle, or die out? To which is offered as Answer: Because some multiply, while others remain stable, dwindle, or die out. The two sides of the equation are the same. We have a tautology. The definition is meaningless.

(Also exposed in Harper's, February 1976, by T. Bethell.)

Note also the use of FANCY WORDS – “Differential reproduction” is one of those ultra-scientific terms whose primary purpose seems to be obfuscation of the uninitiated and self-deception with not a little feather-preening on the part of the adept.

The other main sin against reason committed constantly by the evolutionists is that of Circular Reasoning, which occurs mainly in connection with the fossils, and their supposed ages. Dr. Henry Morris points out this circular reasoning on page 96 of Scientific Creationism. The Fossils are used to date the rocks, that is, the strata in which they appear, and the strata are named and dated on evolutionary assumptions. What is supposed to be proven by the fossils, is originally assumed by the theory of evolution. Dr. Morris says:

Although the fossil record has been interpreted to teach evolution, the record itself has been based on the assumption of evolution. The message is a mere tautology. The fossils speak of evolution because they have been made to speak of evolution.

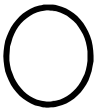
Randy Wysong, in his book The Creation-Evolution Controversy has a very good explanation of how the evolutionists get away with this massive deception (pages 348 ff). In brief, the paleontologist arranges all fossils according to the rule of “from simple to complex.” The geologist consults the evolutionary paleontologist for the sequence of the fossils in the column. The ages of the geological strata are determined by the assumed total amount of evolutionary time and then proportioned accordingly. Radioactive datings and age estimates based upon strata thicknesses are then used to substantiate the order and assign more specific ages to the fossils in the geological column.

Only isotopic decay methods are used because only these yield the enormous spans of time needed for the assumed evolutionary processes. The many other dating methods available are disregarded for they yield alarmingly short spans of time. (Alarming only for the evolutionist, you understand!)

Neither, it should be noted carefully, is the geological column to be found in any one place on earth. For Pre-Cambrian or Paleozoic strata, you must go to the Grand Canyon. For Mesozoic, you must travel to eastern Arizona. To find Tertiary, you must trek to New Mexico. And so on. There are also myriads of sites wherein the fossilized bones of all kinds of animals and plants are mixed together, entirely out of evolutionary order, and the same must be said of strata of the so-called unconformities, wherein “old” rock is atop the “young” rock and must be explained by the moving of mountains that violates natural reason in a manner that divine Faith never does.

So much for two of the many Cardinal Sins against both Reason and Faith of which evolution-theory is guilty.

AFTER-THOUGHT



Mr. Elmendorf included this amongst his illustrations but with no caption. I will undertake to supply one: Empty-headedness is neither Catholic, Christian nor human and can be sinful.



March 1978

**THE
CATHOLIC
CREATIONIST:**
Journal
of the
Catholic Center
for Creation Research



March 1978

This article was taken from ‘*The Catholic Creationist*’, March 1978, pp. 19-31. Paula Haigh, the Editor, gave me permission for reprinting articles in *Daylight*.
Ed.

The Duckbill – a living Victorian paradox

From: Homes Without Hands

BEING A DESCRIPTION OF THE HABITATIONS OF ANIMALS,
CLASSED ACCORDING TO THEIR PRINCIPLE OF CONSTRUCTION

By the Rev. J.G. Wood, MA, FLS, &c. (1868)³

There are two large islands, one large enough to take rank as a continent, which are pre-eminent for the strange character of the creatures which inhabit them. Whenever an animal of more than usual oddity is brought to England, we may safely conjecture that it was taken either in Madagascar or Australia. The creatures which we are now about to examine are natives of the latter country.



Perhaps there never was a more extraordinary and unique being than the well-known animal which is so familiar to us under many titles. Some call it the DUCKBILL, on account of its mandibles, which are ludicrously like those of the bird from which it derives its name. Others call it the WATER MOLE, on account of its aquatic habits and mole-like fur.

Some scientific naturalists have called it the *Ornithorhynchus paradoxus*; others have given it the name of *Platypus anatinus* — the former title being to my mind by far the more appropriate and expressive of the two. The natives of Australia have several names for this remarkable animal; some calling it Mallangong, others Tambreet, and others Tohunbuck — the second of these titles being most generally in use.

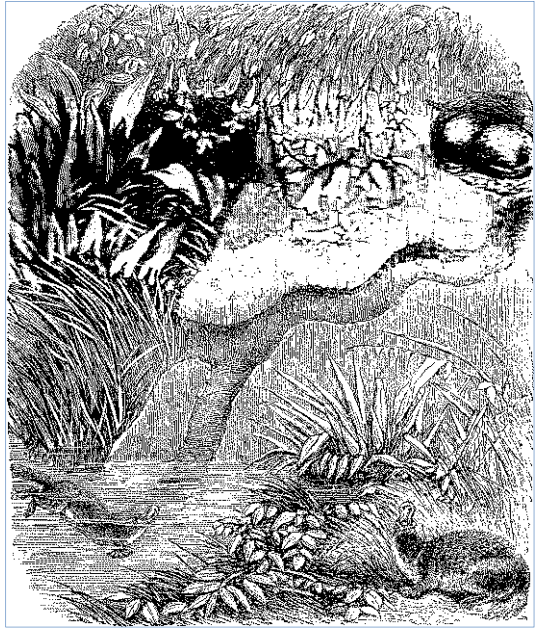
Until Dr. Bennett prosecuted his well-known researches in Australia, no European knew precisely whether the Duckbill was a burrower, or indeed, whether it had a home of any kind. The natives were well aware of the fact that the animal dug tunnels into the ground, and showed great address in discovering the burrows and unearthing the inmates. There, however, their knowledge seemed to end. The only value of an animal to a native Australian lies in its capability of being eaten, and the only lore which an Australian troubles himself to acquire is the knowledge of the habits of the animal with reference to catching it. When he knows where to look for an animal, and how

³ Longmans, Green and Co.; pp. 46-52. [Title and graphic for this extract added by Editor.]

to kill it, he has reached the limit of his education, and never troubles his brain about any branch of learning which does not assist him in procuring something to eat.

In accordance with this principle, Dr. Bennett found that the native Australians were admirable assistants and safe guides up to a certain extent. They could discover the hidden burrows of the Duckbill with instinctive certainty, and could then dig out the animal with their pointed sticks faster than the Europeans with their spades. They knew, moreover, that the burrow had a very evil savour, as is the case with many burrows, and cautioned Dr. Bennett not to thrust his hand into the tunnel, because “he make smell hand.” But in all points of abstract natural history, they were totally at fault.

They did not agree as to the domestic economy of the Duckbill, and were not at all sure whether the young were born alive or hatched from eggs. Some advocated the latter opinion, and said that “old woman have eggs, there in so many days;” but their ideas of the eggs in question were exceedingly vague, oval and spherical eggs being equally declared to belong to the Duckbill. Others rejected the egg theory. “Bel cambango (no egg),” said they, “tumble down; pickaninny tumble down.” And, as if to show the value of inductive reasoning, it more than once happened that when the natives positively averred that the Duckbill could not possibly be hidden in certain localities, Dr. Bennett conjectured that she was very likely to be there, and succeeded in finding her in the very spot which he had pointed out.



MALLAGONG OR DUCKBILL

On looking at a living Duckbill, few would set it down as an excavator of the soil; yet it is a burrower, and makes tunnels of great length and some complexity. The soft broad membrane that extends beyond its claws while the

animal is walking or swimming, and in the latter case forms a paddle by which the creature can propel itself swiftly through the water, falls back when the foot is employed for digging, and aids the animal in flinging back the soil which its claws have scraped away. The rotund body is admirably adapted for traversing the burrows, though the stuffed specimens which generally are seen in museums give but little idea of such capability. As a general rule, these stuffed specimens are much too long, too stiff, too straight, too flat, and too shrivelled. During life, the body is round, and the skin hangs in loose folds around it, having a very curious aspect when the creature is walking upon the land. The Duckbill is, in fact, so very odd a being, that dogs who see it for the first time, as it scrambles along with its peculiar waddling gait, will sit and prick up their ears, and bark at the strange animal, but will not dare to meddle with it; while cats fairly turn tail, and scamper away from so uncanny a beast. The hair with which the body is so densely covered is admirably suited to an animal which passes its time in the water or underground.

Next the skin there is a thick, close coating of woolly fur, through which penetrates a second coat of long hairs, which are very slender at their bases, and can therefore turn in any direction, like those of the mole. The eyes are fuller and rounder than might be expected in an animal that passes so much of its time underground; but they are defended from the earth by a remarkable leathery flap, which surrounds the base of the mandibles, and looks very like the leathern guard of a foil. This curious appendage has probably another use, and is intended to prevent the bill from being thrust too deeply into the mud when the animal is engaged in searching for food.

The wonderful duck-like mandibles into which the head is prolonged are sadly misrepresented in the stuffed specimens which we generally see, and are black, flat, stiff, and shrivelled, as if cut from shoeleather. The dark colour is unavoidable, at all events in the present state of taxidermy. Bare skin invariably becomes blackish brown by lapse of time, no matter what the previous colour may have been, so that the delicate tints of an English maiden's cheek and the sable hue of the blackest negro would, in a few years, assume the same dingy colour and become quite undistinguishable from each other. But, there is no excuse now-a-days for allowing the bare skin to become shriveled. The colours we cannot preserve, the form we can and ought to reproduce. No one would conceive, after inspecting a dried specimen, how round, full and pouting were once those black and wrinkled mandibles, and how delicately they had been coloured while the animal retained life. Their natural hue is rather curious, the outer surface of the upper mandible being very dark grey, spotted profusely with black, and its lower surface pale flesh-colour. In the lower mandible the

inner surface is flesh-coloured, and the outer surface pinky white, sometimes nearly pure white.

Having now glanced at the general form of the Duckbill as it is in life, and not as it is in museums, we will pass to the habitation which it constructs.

Being a peculiarly aquatic animal, the Duckbill always makes its home in the bank of some stream, almost invariably at those wider and stiller parts of the river, which are popularly called ponds. There are always two entrances to the burrow, one below the surface of the water and the other above, so that the animal may be able to regain its home either by diving, or by slipping into the entrance which is above the surface. This latter entrance is always hidden most carefully under over-shadowing weeds and drooping plants, and is so carefully concealed that the unaccustomed eyes of an European can very seldom find it.

When the grasses, &c. are put aside, there is seen a hole of moderate size, on the sides of which are imprinted the footmarks of the animal. By the dampness and sharpness of these impressions, the natives can form a tolerably accurate opinion whether the creature is likely to be at home or not, as in the former case, the footmarks which point upwards are fresher and wetter than those which point downwards. While digging out the Duckbill, they occasionally pull out a handful of the clay, inspect the marks, and then fall to work afresh. From this hole the burrow passes upwards, winding a sinuous course, and often running to a considerable length. From twenty to thirty feet is the usual average, but burrows have been opened where the length was full fifty feet, and where the course was most annoyingly variable, bending and twisting about so as to tire the excavators, and make them quite disgusted with their work. The natives never dig out the entire burrow, but push sticks along it, and sink shafts upon the sticks; just, in fact, as a boy digs out a humble bee's nest, by inserting twigs into the hole, and digging down upon them.

This serpentine form of burrow is in all probability attributable in a great degree to the peculiar instincts of the animal. As, however, the course of the tunnel is extremely variable, and no two burrows have precisely the same curves and windings, it is likely that various obstacles, such as roots and stones, may turn the animal out of its course while engaged in digging its subterranean home, and therefore that the shape of the burrow may in some measure depend upon the character of the ground.

At the upper extremity of the burrow is placed the nest, an excavation of a somewhat oval form, much broader than the width of the burrow, and well supplied with dry weeds and grasses, upon which the young may rest. They

appear to remain in these burrows until they have attained half their full growth, for Dr. Bennett captured a pair of young Duckbills, ten inches in length, which seemed not to have left the burrow. Sometimes there are four young in the nest, and sometimes there is only one, but the usual number is two.

The Duckbill is a far more active animal than could be conceived merely by looking at its form. It is very powerful in proportion to its size; so strong, indeed, that it cannot be held in the hands without great difficulty, slipping through the grasp almost as if it were oiled. The loosely-hanging integuments aid it in this method of escape, and under them may be felt the powerful subcutaneous muscles working with vast energy. It is an admirable climber, not only in its wild state, but among civilized objects. Dr. Bennett found that a pair of tame Duckbills, which he kept for some time, were in the habit of clambering to the tops of bookshelves and other articles of furniture, achieving this feat by a process similar to that which is employed by chimney-sweepers, and those whose business calls upon them to ascend narrow perpendicular passages, namely, by placing their backs against the wall and their feet against the bookcase, and so working their way upwards, in a strictly vermicular fashion. [...]

This mode of climbing may probably be called into operation while the animal is engaged in ascending the almost perpendicular part of the burrow, just above the water's edge.

The whole life of the animal is very similar to that of the musk-rat already mentioned,⁴ and is an alternation between the water and the burrow. While swimming, the animal hardly looks like a living and breathing creature, but bears a great resemblance to the loose bundles of weeds that float vaguely on the surface. Though decidedly aquatic in its habits, the Duckbill cannot withstand a very long immersion in the water; and Dr Bennett found that few of them could endure an immersion of fifteen, or at the most twenty minutes, without being much fatigued by the exertions which they made in order to keep themselves afloat. Several persons who have procured living specimens have drowned them by placing them in water from which there was no mode of escape.

⁴ In this chapter on burrowing mammalia, the Mole takes the first place, occupying ten pages. Others described include Shrews, the Musk Rat, the Fox, the Badger, the Rabbit, the Prairie Dog, the Marmot, the Chipmunk, the Woodchuck, the Gopher, the Polar Bear, the Armadillo, the Aard-vark, and finally the other Australian marsupial, the Echidna. *Ed.*

Postscript on the Platypus

Anthony Nevard

Theories in the 19th century of the origin of the duckbill were for many years dependent on identifying which of its characteristics it shared with other vertebrate classes. In Darwin's view, they represented ancestral forms of life that had persisted unchanged for millennia, owing to their isolated habitats and minimal selection pressure:

... in fresh-water we find some of the most anomalous forms now known in the world as the Ornithorhynchus and Lepidosiren [lungfish], which, like fossils, connect to a certain extent orders at present widely sundered in the natural scale. These anomalous forms may be called living fossils; they have endured to the present day, from having inhabited a confined area, and from having been exposed to less varied, and therefore less severe, competition.¹

Darwin discussed in some detail the general problems of classification in respect of the comparison and accumulation of physical resemblances and differences, and the relative functional value of their various analogous parts. He points out that “rudimentary or atrophied organs ... are often of much value in classification,” and we have noted the fondness of evolutionists to expose ‘vestigial organs’ to support the claimed allegiance of a species to supposed ancestral forms. However, we might also instance the great range of length, texture and colour of the fur of domestic dogs, though all belong to the same species. Dalmatians have not been reclassified with rabbits and ponies owing to having black and white coats! But, Darwin observed,

“If the Ornithorhynchus had been covered with feathers instead of hair, this external and trifling character would have been considered by naturalists as an important aid in determining the degree of affinity of this strange creature to birds.”²

The discoveries of previously unknown species from Australasia and the subsequent arguments of scientists over their classification and origins make a fascinating story, triggered in particular in the 1770s by the voyage of the *Endeavour* under Captain Cook, and the many specimens collected by Joseph Banks.³

¹ Darwin C., *Origin of Species*, [6th Edn. 1872], John Murray, p. 130.

² *Ibid.*, p. 572

³ Ref. Moyal, A., *Platypus*, Allen & Unwin (2001); source for much of this article.

It seems the first platypus (pickled) arrived in Britain in 1799, and was later described by naturalist Thomas Bewick in his *General History of the Quadrupeds* (1800) as being “an animal *sui generis*; it appears to possess a three fold nature, that of a fish, a bird and a quadruped, and is related to nothing that we have hitherto seen.” Dr George Shaw, working from a dried specimen, was the first to describe, illustrate and name the creature as *Platypus* [flat-footed] *anatinus* [duck-like]. He was nevertheless still suspicious that the specimen might be a hoax. Banks obtained other specimens and sent one to Prof. Johann Blumenbach, based at the University of Göttingen, who, unaware of Shaw’s description, named the novelty beastie *Ornithorhynchus* [bird-beaked] *paradoxus* [puzzle]. Eventually it was decided it would be officially named *Ornithorhynchus anatinus*.

Naturalists were indeed faced with a conundrum. The animal appeared from its covering of fur or hair to belong to the mammals, but its water-dwelling habits suggested an amphibian (then classed with reptiles). Anatomist Everard Home, based in London, focused firstly on the creature’s beak and internal organs, and discovered the beak was a fleshy sense organ used to aid feeding underwater, not a part of the mouth like the beak of a bird. In addition, the reproductive organs were more similar to those of lizards, and the excretory and reproductive tracts opened into a common chamber, the cloaca. This discovery, also seen in the echidna (which had been discovered some seven years earlier than the *Ornithorhynchus*) led to French zoologist St-Hilaire coining the term ‘monotreme,’ [one-holed] to name a new class into which they were both placed. Home concluded that the platypus appeared to be ovo-viviparous, producing young from eggs hatched within the female body. This led to many years of research and speculation involving top scientists including Cuvier, Owen, Darwin, Lyell, Huxley and Dr George Bennett ⁴ to find out if the creature laid eggs, how the young developed, whether and how the mother produced milk, how the young suckled, and of course the old questions of their classification and origins.

It was not till 1884 that a young embryologist William Caldwell discovered for certain that the monotremes do in fact lay eggs, but they are soft-shelled and unlike birds’ eggs.



Swimming platypus [Wikimedia Commons (6811147158)]

⁴ Bennett was a friend of Richard Owen and pioneered research on the platypus.

Despite the unique characteristics of monotremes, evolutionists have persisted in considering them to represent primitive ancestral forms. In *The Science of Life*⁵ we read:

The mammals, too, are now linked by fossils with their reptilian ancestors. We knew already that mammals must have sprung from reptiles. Apart from all other lines of evidence, the discovery of those “living fossils,” the Platypus and the Echidna, clinched the matter. Had we nothing but the skeletons of these animals, it would be very doubtful whether we should call them reptiles in the last stage of becoming mammals, or mammals which had just ceased being reptiles.

The conclusion here is that they are true mammals as they have hair, a controlled temperature and produce milk for their young.



Platypus skeleton Pengo, Melbourne museum,
[Peter Halasz, Creative Commons]

A close look at the hind foot of the skeleton above reveals a unique feature: spurs, which are connected to poison glands: venom in mammals is very rare. Another specialised ‘adaptation’ was discovered in 1985 by German physiologist Henning Scheich, working with a captive platypus, who showed that it uses electric sensors on its bill to detect prey under water. Further research by Uwe Proske in Melbourne showed the receptors to be nerve fibres rather than specialised hair cells, as found in some fish. So the platypus must be considered a ‘highly evolved’ animal.

As Ann Moyal states in the conclusion to her book:

“the platypus, with its strange melange of characters and affinities associated with mammal, reptile and bird, is *not* —as nineteenth-century theorists and many twentieth-century biologists insisted— a ‘primitive’ animal.”⁶

⁵ Wells H.G., Huxley J., Wells G.P., *The Science of Life*, Cassell (1931), p. 213

⁶ *Ibid.*, p. 205 [italics in original].

COPERNICUS AND HIS TIMES

James J. Walsh, M.D., Ph.D., LL.D.

From *Catholic Churchmen in Science* (1906) [Part I of two]¹



Nicolao Copernico

The association of the name of Copernicus with that of Galileo has always cast an air of unorthodoxy about the great astronomer. The condemnation of certain propositions in his work on astronomy in which Copernicus first set forth the idea of the universe as we know it at present, in contradistinction to the old Ptolemaic system of astronomy, would seem to emphasize this suspicion of unorthodox thinking. He is rightly looked upon as one of the great pioneers of our modern physical science, and, as it is generally supposed that scientific tendencies lead away from religion, there are doubtless many who look upon Copernicus as naturally one of the leaders in this rationalistic movement. It is forgotten that scarcely any of the great original thinkers have escaped the stigma of having certain propositions in some of their books condemned, and that this indeed is only an index of the fallibility of the human mind and of the need there is for some authoritative teacher. The sentences in Copernicus's book requiring correction were but few, and were rather matters of terminology than of actual perversion of accepted teaching. It was as such that their modification was suggested. In spite of this, the impression remains that Copernicus must be considered as a rationalizing scientist, the first in a long roll of original scientific investigators whose work has made the edifice of Christianity totter by removing many of the foundation-stones of its traditional authority.

It is rather surprising, in view of this common impression with regard to Copernicus, to find him, according to recent biographers, a faithful clergyman in honor with his ecclesiastical superiors, a distinguished physician whose chief patients were clerical friends of prominent position and the great noblemen of his day, who not only retained all his faith and reverence for the Church, but seems to have been especially religious, a devoted adherent of the Blessed

¹ American Ecclesiastical Review, The Dolphin Press, pp. 14-31

Virgin Mother of God, and the author of a series of poems in her honor that constitute a distinct contribution to the literature of his time.

All this should not be astonishing, however; for in the list of the churchmen of the half century just before the great religious revolt in Germany are to be found some of the best known names in the history of the intellectual development of the race. This statement is so contrary to the usual impression that obtains in regard to the character of that period as to be a distinct source of surprise to the ordinary reader of history who has the realization of its truth thrust upon him for the first time. Just before the so-called Reformation, the clergy are considered to have been so sunk in ignorance, or at least to have been so indifferent to intellectual pursuits and so cramped in mind as regards progress, or so timorous because of inquisition methods, that no great advances in thought, and especially not in science, could possibly be looked for from them. To find, then, that not only were faithful churchmen leaders in thought, discoverers in science, organizers in education, initiators of new progress, teachers of the New Learning, but that they were also typical representatives and yet prudent directors of the advancing spirit of that truly wonderful time, is apt to make us think that surely—as the Count de Maistre said one hundred years ago, and the Cambridge Modern History repeats at the beginning of the twentieth century when treating of this very period—“history has been a conspiracy against the truth.”

Not quite fifty years before Luther's movement of protest began—that is, in 1471—there passed away in a little town in the Rhineland a man who has been a greater spiritual force than perhaps any other single man that has ever existed. This was Thomas à Kempis, a product of the schools of the Brethren of the Common Life, a teaching order that during these fifty years before the Protestant Revolution had over ten thousand pupils in its schools in the Rhineland and the Netherlands alone. As among these pupils there occur such names as Erasmus, Nicholas of Cusa, Agricola, not to mention many less illustrious, some idea of this old teaching institution, that has been very aptly compared to our modern Brothers of the Christian Schools, can be realized.

Kempis was a worthy initiator of a great half century. He had among his contemporaries, or followers in the next generation, such men as Grocyn, Dean Colet, and Linacre in England, Cardinal Ximenes in Spain, and Copernicus in Germany. Considering the usual impression in this matter as regards the lack of interest at Rome in serious study, it is curiously interesting to realize how closely these great scholars and thinkers were in touch with the famous popes of the Renaissance period. The second half of the sixteenth century saw the

elevation to the papacy of some of the most learned and worthy men that have ever occupied the Chair of Peter. In 1447 Nicholas V became pope, and during his eight years of pontificate initiated a movement of sympathy with modern art and letters that was never to be extinguished. To him more than to any other may be attributed the foundation of the Vatican Library. To him also is attributed the famous expression that, "no art can be too lofty for the service of the Church." He was succeeded by Calixtus III, a patron of learning, who was followed by Pius II, the famous Æneas Sylvius, one of the greatest scholars and most learned men of his day, who had done more for the spread of culture and of education in the various parts of Europe than perhaps any other alive at the time.

The next pope, Paul II, accomplished much during a period of great danger by arousing the Christian opposition to the Saracens. His encouragement and material aid to the Hungarians, who were making a bold stand against the Oriental invaders, merit for him a place in the role of defenders of civilization. To him is due the introduction of the recently discovered art of printing and its installation on a sumptuous scale worthy of the center of Christian culture. His successor, Sixtus IV, deserves the title of the founder of modern Rome. Bridges, aqueducts, public buildings, libraries, churches—all owe to his fostering care their restoration and renewed foundation. He made it the purpose of his life to attract distinguished humanistic scholars to his capital, and Rome became the metropolis of culture and learning as well as the mother city of Christendom.

Under such popes it is no wonder that Rome and the cities of Italy generally became the homes of art and culture, centers of the new humanistic learning and the shelters of the scholars of the outer world. The Italian universities entered on a period of intellectual and educational development as glorious almost as the art movement that characterized the time. As this was marked by the work of such men as that universal genius Leonardo da Vinci, Michael Angelo, poet, painter, sculptor, architect; Raphael, Titian, and Correggio, whose contemporaries were worthy of them in every way, some idea can be attained of the wonderful era that developed. No wonder scholars in every department of learning flocked to Italy for inspiration and the enthusiasm bred of scholarly fellowship in such an environment. From England came men like Linacre, Selling, Grocyn, and Dean Colet; Erasmus came from the Netherlands, and Copernicus from Poland. Copernicus there obtained that scientific training which was later to prove so fruitful in his practical work as a physician and in his scientific work as the founder of modern astronomy.

It may be as well to say at the beginning that even Copernicus was not the first to suggest that the earth moved, and not the sun; and that, curiously enough, his anticipator was another churchman, Nicholas of Cusa, the famous Bishop of Brixen. Readers of Janssen's "History of the German People" will remember that the distinguished historian introduces his monumental work by a short sketch of the career of Cusanus, as he is called, who may be well taken as the typical pre-Reformation scholar and clergyman. Cusa wrote in a manuscript—which is still preserved in the hospital of Cues, or Cusa—published for the first time by Professor Clemens in 1847: "I have long considered that this earth cannot be fixed, but moves as do the other stars—*sed movetur ut alia stellæ*" What a curious commentary these words, written more than half a century before Galileo was born, form on the famous expression so often quoted because supposed to have been drawn from Galilee by the condemnation of his doctrine at Rome: *E pur se muove*—"and yet it moves!" Cusanus was a Cardinal, the personal friend of three popes, and he seems to have had no hesitation in expressing his opinion in the matter. In the same manuscript the Cardinal adds: "And to my mind the earth revolves upon its axis once in a day and a night." Cusanus was, moreover, one of the most independent thinkers that the world has ever seen, yet he was intrusted by the pope about the middle of the fifteenth century with the reformation of abuses in the Church in Germany. The pope seems to have been glad to be able to secure a man of such straightforward ways for his reformatory designs.

The ideas of Nicholas of Cusa with regard to knowledge and the liberty of judgment in things not matters of faith can be very well appreciated from some of his expressions. "To know and to think," he says in one passage, "to see the truth with the eye of the mind is always a joy. The older a man grows, the greater is the pleasure it affords him; and the more he devotes himself to the search after truth, the stronger grows his desire of possessing it. As love is the life of the heart, so is the endeavor after knowledge and truth the life of the mind. In the midst of the movements of time, of the daily work of life, of its perplexities and contradictions, we should lift our gaze fearlessly to the clear vault of heaven and seek ever to obtain a firmer grasp of, and keener insight into, the origin of all goodness and duty, the capacities of our own hearts and minds, the intellectual fruits of mankind throughout the centuries, and the wondrous works of nature around us: but ever remembering that in humility alone lies true greatness, and that knowledge and wisdom are alone profitable in so far as our lives are governed by them."² It is no wonder, then, that the

² "History of the German People at the Close of the Middle Ages." By Johannes Janssen. Translated from the German by M. A. Mitchell and A. M. Christie. Vol. I, p.3

time was ripe for Copernicus and his great work in astronomy, nor that that work should be accomplished while he was a canon of a cathedral and for a time the vicar-general of a diocese.

It is now nearly five years since Father Adolph Muller, S.J., professor of Astronomy in the Pontifical Gregorian University of Rome, and director of a private observatory on the Janiculum in that city, wrote his historical scientific study³ of the great founder of modern astronomy. The book has been reviewed, criticized and discussed very thoroughly since then, and has been translated into several languages. The latest translation was into Italian, the work of Father Pietro Mezzetti, S. J.,⁴ and was published in Rome at the end of 1902—having had the benefit of the author's revision. The historical details, then, of Copernicus's life may be considered to have been cast into definite shape, and his career may be appreciated with confidence as to the absolute accuracy and essential significance of all its features.

Nicholas Copernicus—to give him the Latin and more usual form of his name—was the youngest of four children of Nicas Copernigk, who removed from Cracow in Poland to Thorn in East Prussia (though then a city of Poland), where he married Barbara Watzelrode, a daughter of one of the oldest and wealthiest families of the province. His mother's brother, after having been a canon for many years in the cathedral of Frauenburg, was elected Bishop of the Province of Ermland. The future astronomer was born in 1473, at a time when Thorn, after having been for over two hundred years under the rule of the Teutonic Knights, had for some seven years been under the dominion of the King of Poland. There were two boys and two girls in the family; and their fervent Catholicity can be judged from the fact that all of them, parents and children, were inscribed among the members of the Third Order of St. Dominic. Barbara, the older sister, became a religious in the Cistercian Convent of Kulm, of which her aunt Catherine was abbess, and of which later on she herself became abbess. Andrew, the oldest son, became a priest; and Nicholas, the subject of this sketch, at least assumed, as we shall see, all the obligations of the ecclesiastical life, though it is not certain that he received the major religious orders.

Copernicus's collegiate education was obtained at the University of Cracow, at that time one of the most important seats of learning in Europe. The five hundredth anniversary of the founding of this University was celebrated with

³ "Nikolaus Kopernicus, Der Altmeister der neueren Astronomie, Ein Lebens und Kultur Bild," von Adolf Muller, S.J.

⁴ Professor of Astronomy and Physics at the Pontifical Leonine College of Anagni.

great pomp only a few years ago. Its origin, however, dates back to the times of Casimir the Great, at the end of the thirteenth or the beginning of the fourteenth century. Its foundation was due to the same spirit of enthusiastic devotion to letters that gave us all the other great universities of the thirteenth century. The original institution was so much improved by Jagello, King of Poland, at the beginning of the fifteenth century, that it bears his name and is known as the Jagellonian University. It was very natural for Copernicus to go back to his father's native city for his education; but his ambitious spirit was not content with the opportunities afforded there. He does not seem to have taken his academic degrees, and the tradition that he received his doctorate in medicine at the University of Cracow cannot be substantiated by any documentary evidence.

At Cracow, Copernicus devoted himself mainly to classical studies, though his interest in astronomy seems to have been awakened there. In fact, it is said that his desire to be able to read Ptolemy's astronomy in the original Greek, and to obtain a good copy of it, led him to look to Italy for his further education. During his years at Cracow, however, he seems to have made numerous observations in astronomy, as most of the astronomical data in his books are found reduced to the meridian of Cracow. The observatory of Frauenburg, at which his work in astronomy in later life was carried on, was on the same meridian; so that it is difficult to say, as have some of his biographers, that, since Cracow was the capital of his native country, motives of patriotism influenced him to continue his observations according to this same meridian. Copernicus was anxious, no doubt, to come in contact with some of the great astronomers at the universities of Italy, whom he knew by reputation and whose work was attracting attention all over Europe at that time.

How faithfully Copernicus applied himself to his classical studies can be best appreciated from some Latin poems written by him during his student days. These poems are an index, too, of the personal character of the man, and give some interesting hints of the religious side of his character. Altogether there are seven Latin odes, each ode composed of seven strophes. The seven odes are united by a certain community of interest or succession of subjects. All of them refer to the history of the Redeemer either in types or in reality. In the first one the prophets prefigure the appearance of the Saviour; in the second the patriarchs sigh for His coming; the third depicts the scene of the Nativity in the Cave of Bethlehem; the fourth is concerned with the Circumcision and the imposition of the Name chosen by the Holy Ghost; the fifth treats of the Star and the Magi and their guidance to the Manger; the sixth concerns the presentation in the Temple; and the seventh, the scene in which Jesus at the age

of twelve disputes with the doctors in the Temple at Jerusalem.

Copernicus's recent biographers have called attention particularly to the poetical beauties with which he surrounds every mention of the Blessed Virgin and her qualities. As is evident even from our brief resume of the subjects of the odes, the themes selected are just those in which the special devotion of the writer to the Mother of the Saviour could be very well brought out. There are, besides, a number of astronomical allusions which stamp the poems as the work of Copernicus, and which have been sufficient to defend their authenticity against the attacks made by certain critics, who tried to point out how different was the style from that of Copernicus's later years in his scientific writings. The tradition of authorship is, however, too well established on other grounds to be disturbed by criticism of this sort. The poems were dedicated to the Pope. In writing poetry Copernicus was only doing what Tycho Brahe and Kepler, his great successors in astronomy, did after him; and the argument with regard to the difference of style in the two kinds of writings would hold also as regards these authors.

Copernicus's years as a boy and man—that is, up to the age of thirty-five—corresponded with a time of great intellectual activity in Europe. This fact is not as generally recognized as it should be, for intellectual activity is supposed to have awakened after the so-called Reformation. During the years from 1472 to 1506, however, there were founded in Germany alone no less than six universities: those of Ingolstadt, Treves, Tübingen, Mentz, Wittenberg, and Frankfort-on-the-Oder. These were not by any means the first great institutions of learning that arose in Germany. The universities of Prague and Vienna were more than a century old, and, with Heidelberg, Cologne, Erfurt, Leipsic, and Rostack, besides Greifswald and Freiburg, founded about the middle of the fifteenth century, had reached a high state of development, and contained larger numbers of students, with few exceptions, than these same institutions have ever had down to our own day. In most cases their charters were derived from the pope; and most of the universities were actually recognized as ecclesiastical institutions, in the sense that their officials held ecclesiastical authority.

At this time—the end of the fifteenth and the beginning of the sixteenth century—it was not unusual for students, in their enthusiasm for learning, to attempt to exhaust nearly the whole round of university studies. Medicine seems to have been a favorite subject with scholars who were widely interested in knowledge for its own sake. Almost at the same time that Copernicus was studying in Italy, the distinguished English Greek scholar, Linacre, was also engaged in what would now be called post-graduate work at various Italian universities,

and in the household of Lorenzo the Magnificent at Florence, with whose son — so much did Lorenzo think of him — he was allowed to study Greek. Linacre (as will be seen more at length in the sketch of his life in this volume), besides being the greatest Greek scholar of his time, the friend later of More and Colet and Erasmus in London, was also the greatest physician in England.

To those familiar with the times, it may be a source of surprise to think of Copernicus, interested as we know him to have been in literature and devoted so cordially to astronomy, yet taking up medicine as a profession. He seems, however, to have been led to do so by his distinguished teacher, Novara, who realized the talent of his Polish pupil for mathematics and astronomy and yet felt that he should have some profession in life. A century ago Coleridge, the English writer, said that a literary man should have some other occupation. Oliver Wendell Holmes improved upon this by adding: “And, as far as possible, he should confine himself to the other occupation.” Novara seems to have realized that Copernicus might be under the necessity of knowing how to do something else besides making astronomical observations, in order to gain his living; and as medicine was satisfyingly scientific, the old teacher suggested his taking it up as a profession. Copernicus made his medical studies in Ferrara and Padua, and obtained his doctorate with honors from Ferrara.

Copernicus seems to have taken up the practice of his profession seriously, and to have persevered in it to the end of his life. His biographers say that in the exercise of his professional duties he was animated by the spirit of a person who had devoted himself to the ecclesiastical life. While he did not publicly practise his profession, he was ever ready to assist the poor; and he also acquired great reputation in the surrounding country for his medical attendance upon clerics of all ranks. This continued to be the case, notwithstanding the fact that after the death of his uncle his mother inherited considerable wealth, and the family circumstances changed so much that he might well have given up any labors that were meant only to add to his income. In a word, he seems to have had a sincere interest in his professional work, and to have continued its exercise because of the opportunities it afforded for the satisfaction of a mind devoted to scientific research.

Copernicus acquired considerable reputation by his medical services. His friend Giese speaks of him as a very skilful physician, and even calls him a second Æsculapius. Maurice Ferber, who became Bishop of Ermland in 1523, suffered from a severe chronic illness that began about 1529. He obtained permission from the canons of the cathedral to have Doctor Copernicus, whose ability and zeal he never ceased to praise, to come from the cathedral town where he

ordinarily resided to Heilsburg, in order to have him near him. Bishop Ferber's successor, Dantisco, also secured Copernicus's aid in a severe illness, and declared that his restoration to health was mainly due to the efforts of his learned physician. Giese was so confident of the Doctor's skill that when he became Bishop of Kulm and on one of his episcopal visitations fell ill at a considerable distance from Copernicus's place of residence, he insisted on having the astronomer doctor brought to take care of him.

In 1541 Duke Albert of Prussia became very much worried over the illness of one of his most trusted counsellors. In his distress he had recourse to Copernicus, and his letter asking the Canon of the Cathedral of Frauenburg to come to attend the patient is still extant. He says that the cure of the illness is "very much at his heart"; and, as every other means has failed, he hopes Copernicus will do what he can for the assistance of his faithful and valued counsellor. Copernicus yielded to the request, and the counsellor began to improve shortly after his arrival. At the end of some weeks the Duke wrote again to the canons of the cathedral asking that the leave of absence granted to Copernicus should be extended in order to enable him to complete the cure which had been so happily begun. In this second letter the Duke talks of Copernicus as a most skilful and learned physician. At the end of the month there is a third letter from the Duke, in which he thanks all the canons of the cathedral for their goodness in having granted the desired permission, and he adds that he shall ever feel under obligations "for the assistance rendered by that very worthy and excellent physician, Nicholas Copernicus, a doctor who is deserving of all honor." Not long afterward, when Copernicus's book on astronomy was published, a copy of it was sent to the Duke, and he replied that he was deeply grateful for it, and that he should always preserve it as a souvenir of the most learned and gentlest of men.

There are a number of notes on the art of medicine made by Copernicus in the books of the cathedral library at Frauenburg. They serve to show how faithful a student he was, and to a certain extent give an idea of the independent habit of mind which he brought to the investigation of medicine as well as to the study of astronomy. Unfortunately, these have not as yet found an editor; but it is to be hoped that we shall soon know more of the medical thinking of a man over whose mind tradition, in the unworthier sense of that word, exercised so little influence.

[Part II in the next issue will focus on Copernicus's work on astronomy.]

Giants

James Lynch

We know from history that David slew Goliath of Gath, the Giant. There are many earlier references to giants in history:

*Deuteronomy Chapter 3*¹

Og king of Basan came to fight at Edrai
He is utterly destroyed none of them flee
The Argob country and all sixty cities
Wall or no wall now Jacob settees (cities)(none pities)

We kept the livestock they'd be useful
Torrent Arnon to mount Hermon full
Sidonians call it Sarion Amorrhites Sanir
Languages can names often not mirror

King Og was a giant of the giants of old
His big bed of iron only him could hold
It's still in Rabbath for all to behold
Nine by four cubits its measure all told

Basan was then called the Land of Giants
Ruben Gad half-Manasses for it supplants
Manasses son Jair got all Argob country
To Gessuri and Machati goes their sway

Are we to doubt that some humans as well as ancient animals were fresher from creation, less prone to disease and sin, and were in many cases of extraordinary strength or size? Could the finds of archaeology not be the same animal species we know today except their gigantic forebears? It is generally the extraordinary that are exhibited.²

¹ Lynch, Rev. Philip *The Old Testament Poetical (in Irish Metre)*, James Lynch (2014), p.74

² Two useful resources on this interesting subject are: **Brewer, E.C.**, *The Wordsworth Dictionary of Phrase and Fable*, Wordsworth Editions Ltd.(2001), and **Swinton, W.E.**, *Giants Past and Present*, Robert Hale (1966).Ed.



Giants Causeway in Northern Ireland is associated with a set of invaders, the Formhorians, at least some of whom may have been of greater stature than the natives of the time

The elephant is undoubtedly a giant of an animal and its survival may have been a result of its usefulness to mankind. Perhaps other gigantic animals could not be put to work and were dangerous to man, so have not survived.

Many of the giant animals of history were associated with waterways and the Loch Ness monster of Saint Colmcille's (Columba's) time is no exception. We may be associating some of our giant exhibits with land dwelling animals when they were in fact more sea or water based. A hippopotamus, if it went extinct and its fossilised remains found later, could lead the finder to accredit it a land dweller when in fact most of its time was spent in the water.

It could be misleading to exhibit animal fossils and assume that all animals of that genre of that time were of similar stature.

Some Quotations from the Eastertide Liturgy

Blessing the Baptismal Water (Traditional Catholic rite) *The prayers used in the Easter Night ceremonies vividly and explicitly draw on the texts of Genesis.*

“O God, whose Spirit in the very beginning of the world moved over the waters [Gen 1: 2], that even then the nature of water might receive the virtue of sanctification. O God, who by water didst wash away the crimes of the guilty world, and by the pouring out of the deluge didst give a figure of regeneration, that one and the same element might in a mystery be the end of vice and the beginning of virtue [Gen 6-8].”

“Wherefore I bless thee, O creature of water, by the living God, by the true God, by the holy God, by that God who in the beginning separated thee by His word from the dry land, and whose spirit moved over thee [Gen 1: 6-10]. Who made thee flow from the fountain of paradise and commanded thee to water the whole earth with thy four rivers [Gen 2: 10-14].”

The Scriptures may need an interpreter

“Then He said to them: O Foolish, and slow of heart to believe in all things which the prophets have spoken... And beginning at Moses and all the prophets, He expounded to them in all the Scriptures the things that were concerning Him [Luke 24: 25,27].” (Easter Monday, Gospel)

“For they that inhabited Jerusalem, and the rulers thereof, not knowing Jesus, nor the voices of the prophets which are read every Sabbath, judging Him have fulfilled them [Acts 13:27].” (Easter Tuesday, Epistle)

“These are the words which I spoke to you while I was yet with you, that all things must needs be fulfilled which are written in the law of Moses, and in the Prophets, and in the Psalms, concerning Me. Then He opened their understanding, that they might understand the Scriptures [Luke 24: 44-45].” (Easter Tuesday, Gospel)

“And Philip running thither, heard him reading the prophet Isaias; and he said: Thinkest thou that thou understandest what thou readest? Who said: And how can I, unless some man show me? [...] Then Philip opening his mouth, and beginning at this Scripture, preached unto him Jesus [Acts 8: 30, 31, 35].” (Easter Thursday, Epistle).



Rembrandt, *The Baptism of the Eunuch*, 1626; Museum Catherine Convent, Utrecht

Mysteries of the Marsupiala

The native fauna of Australia is dominated by those mammals ('marsupials') that bear their young as tiny foetuses and rear them to a more advanced stage in a belly-pouch (marsupium). The placental mammals, prior to human introductions such as rabbits, horses, cattle and sheep, were confined to a variety of bats and rodents. The two living monotremes were described by palaeontologist **Alfred Romer** as "exceedingly primitive" but also as "highly specialised." ¹ Both the platypus and echidna lay eggs, but the latter also has a pouch!



Red kangaroo with joey in pouch.

According to evolutionists, the monotremes 'must have' diverged millions of years ago from mammal-like reptiles, but there are few fossils and, according to **David Attenborough**, "we have virtually nothing to help us link these creatures to any group of fossil reptiles." ²

There are fossils of extinct marsupials from South America as well as Australasia, but it is not believed that marsupials were the ancestors of placentals. What is remarkable is the number of pouched mammals that occupy similar habitats and niches to placentals and share very similar anatomical features. **Edward Wilson** lists 12 chief mammalian analogue 'pairs', including marsupial mouse/gerboas, quolls/small cats, numbats/anteaters, marsupial mole/moles, wombats/ woodchuck, Tasmanian wolf / wolves, kangaroos/antelopes. ³



Koala bears—icons of Australia

The range of similarities that are claimed to have arisen by 'parallel evolution' is incredible. And how then to explain the unique features of, e.g., koalas and kangaroos which have no placental look-alikes?

¹ *Vertebrate Palaeontology*, 2nd Edn. (1945), Uni. of Chicago, p.310

² *Life on Earth*, (1981), Fontana/Collins, p. 207

³ *The Diversity of Life*, (1992), Penguin, p. 114

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