

SCIENTIFIC CONCEPTS IN THIRUVĀSAGAM**Dr. S.Subbulakshmi****Director , School Of Music and Fine Arts,
Vels University (VISTAS), Chennai – 600 117****E-mail id: kavinthree@gmail.com, director.music@velsuniv.ac.in****Abstract:**

Thiruvāsagam authored by Saint Mānikkavāsagar establishes the Author's diverse personality and his expertise in multiple areas in Science like Physics, Astrophysics, , Space Science, Medical science, Genetics, Mathematical Science , Evolutionary Science Atomic Science , Geographical Science, Animal science , Plants science, Yogic Science and so on .Mānikkavāsagar is compared with many Scientists like Sir IssacNewton , Dalton ,Copernicus , Galileo, Charles Darwin and Stephan Hocking. The third ChapterAndappagudhi in Thiruvāsagam throws light on Universe , Origin of Earth , Big Bang Theory , the shape of the Earth, Milky way and the Expanding UniverseAndappagudhi throws light on Universe , Origin of Earth , Big Bang Theory , the shape of the Earth, Milky way and the Expanding Universewhich are mind blowing and astonishing and he becomes the first person to confirm the Earth's shape as spherical . His knowledge about genetics and embryonic development in medical science further adds feather to his Crown. The three dimensional nature of god and the explanation of Infinity and very big digit numbers shows his mathematical geniusness.Thiruvāsagam proves the author is a Scientist other than a saint composerThiruvāsagam is a multi branched, multifarious text though it belongs to divine and Bakthi literature.

Keywords: Physics - Space Science - Medical science - Mathematics –Evolution –Genetics-.

The author of Thiruvāsagam is Saint Mānikkavāsagar chief minister in the Pandian kingdom of 9 thcentury . His text establishes that Mānikkavāsagar is a multifaceted personality who is highly knowledgeable in many subjects like Physics ,Astrophysics, Space Science, Medical science, Human psychology, Mathematical science , Evolutionary Science, Atomic Science,Geographical Science, Animal Science , Plant Science , Yogic Science and so on.Thiruvāsagam can be compared to **adiamond** with many angled flat surfaces which increases its ability to reflect light in all sides.





Mānikkavāsagar

Physics and Thiruvāsagam:

Mānikkavāsagar proves himself a physicist by explaining the Law of Motion in the third chapter- Andappagudhi. .Mānikkavāsagar explains the Newton's first law of motion as

“Nadappananadāy Kidappanakidāy Nirpananiruvi (109 – 110 -Thiruvāsagam Andappagudhi) In Every part which moves will always move; What lies still, will always at rest what stands , Thou dost establish (G.U.Pope).

Newton and Mānikkavāsagar : Sir Issac Newton was a scientist, Mathematician , Physician belongs to 17th century . He worked on Dynamics which is the scientific study of the forces involved in movements. Dynamics is a branch of Physics (mechanics) which deals with forces and their relation primarily to the motion. **Newton's First Law of Motion.:**

“A body at rest persists in its state of rest and a body in motion remains in constant motion along a straight line unless acted upon by an external force”. According to

this law an object will not change its motion unless a force acts upon it . This is mentioned by Mānikkavāsagar as the body on rest will always be in rest without movement (Kidappanakidāy) The body on standing position or stop position will be in the same position (Nirpananiruvi) and which moves always move until activated by any. Mānikkavāsagar explains this law of motion in Thiruvāsagam in a simple way.



.Sir Isaac Newton

Mathematical Science and Thiruvāsagam:

Infinity : Mānikkavāsagar speaks about infinity in first chapter- Sivapurānam



Ennirandhuellaiilādhāne-Sivapuranam – 24 . The wordennirandhurefers” infinity “ when we add number 1+2+3+4 the .end will be infinity. Mānikkavāsagaruses this infinite numberfor God’s unique nature which cannot be counted in numbers. Infinity is used in many places in Thiruvāsagam .

1)Enniranda - 1.24

2)Ennil Pal - 2.3

3) Ennily- 639, 323

4)Kanakilā- 468

5) Alavillā - 482, 624

Three Dimensional nature :In the First Chapter Sivapuranam he mentions three dimensional nature (3 D) of God.

Aiyaa!enaōngiāzhndhuagandranunniyane – (Sivapuranam -35) Here in this lineōngiis infinite length of height , āazhnduis infinitelength of depth and agandrais infinite length of breath. So he occupies a space which has a height of **infinite number** and depth of **infinite number** and breath of **infinite number**. So he exists in such a large area which cannot be explained in numbers.

Big Digit Numbers :Thiruvāsagam shows many bigdigit numbers like

- 1) a hundred millions (nūtrorukodi 3.4)
- 2) some hundred crore (pal Nūrukodi 33)
- 3) some crore(Pala kōdi 3.26)
- 4) Six crore (Aārukōdi 4.44)
- 5) Hundred Hundred Thousand (NūruNūrāyiram – 2.24)
- 6) Thousand name (Aāyiram – 424)
- 7) Thousand Lotus (pangayamAāyiram– 324)
- 8) Thirty three crore devas (muppatthumukōdi - 625)
- 9) Hundred (Nūru – 3-4)

Space Science (Astronomy) and Thiruvāsagam :Astronomy is one of the oldest Natural Science . It uses Mathematics , Physics , Chemistry in order to explain their origin and evolution . Mānikkavāsagar in the third Chapter of Thiruvāsagam the “Andappagudhi“ throws light on**Universe , Origin of Earth , Big Bang Theory , the shape of the Earth, Milky way and the Expanding Universe.**

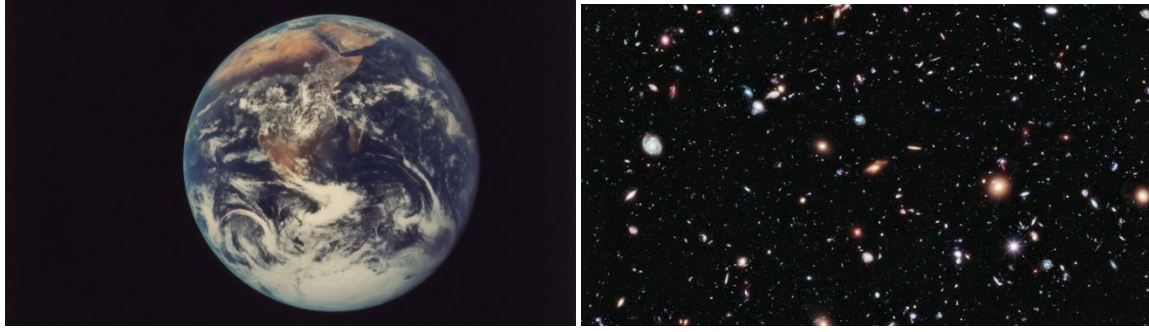
Earth



Universe

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AndappagudhiyinUndaipirakkam
Alaparunthanmaivalaperunkātchi
Ondranukkondrunindrezhpagarin
NūttorukōdiyinmērpadaVirindana

(Thiruvāsagam – Andappagudhi- 1- 4)

Shape and development of Earth : He explains that the planets which originate from the expanding universe are **spherical in shape**(**Undai** is ball like , **pirakkam** is origin) The Universe expands through the outer layer with a Big Bang . Its expansion is more than a **hundred millions in number** .(**nutrorukodi** is hundred million and **virindana** is expansion) . Mānikkavāsagar confers the name “**Andam**“ for universe in Ninth century itself. He only first elucidates the shape of our planet Earth as spherical which was later proved by scientists **Copernicus and Galileo** with great difficulty. The expansion of hundred millions of planets from big bang is the latest discovery of today’s scientists of 20th century like **Stephan Hocking** one of the Astrophysicist and cosmologist who worked on the origin and structure of the universe from big bang. The expanding Universe in infinite numbers was expounded by Mānikkavāsagar very long back in Thiruvāsagam .

Evolutionary Science and Thiruvāsagam : **Charles Darwin** a Scientist, Naturalist , Geologist and Biologist of the 19th Century . He was the first person who has explained the “Theory of Evolution .“ He defined Evolution as descent with modification the idea that species changes over time , give rise to new species and share a common ancestor . In this he delineates the migration of invertebrates to vertebrates through evolution . So according to him the Evolution of Mankind is derived from single celled Protozoa to multicelled highly formed Human Being.

Mānikkavāsagar and Darwin : This theory of Evolution is fixed and appreciated in the text Thiruvāsagam by Mānikkavāsagar many centuries ago. It is explaining the Evolution from single celled Grass to the highly evolved Human being.

“ Pullāgippoodāipuzhuvāimaramāgi



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Palvirugamāgiparavaiyāipāmbāgi

Kallāimanidharāipēiyāikanangalāi

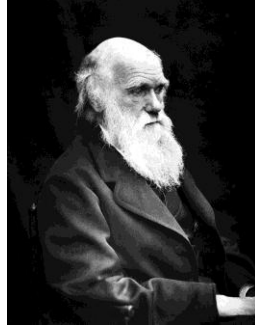
Valasurarāgimunivarāithevarāi

Sellānindraiththāvarasangamathul(Sivapurānam - 26 – 30)

here it speaks

from(**Pul**)Grass >>..shrub>> worm >>> tree >> beast >> bird >> snake >> stone >> man >> demon >> mighty asurās>>asceties>> God . So the evolution from Grass (**Pullāgi**) to Man (**manidharāi**) is explicated in a clear manner in Thiruvāsagam very early before Charles Darwin.

Charles Darwin



:Genetics and Thiruvāsagam :

Genetics is a branch of Biology concerned with the study of Genes, Genetic Variations and Heredity in organisms. Here Heredity refers to specific mechanism by which characteristics or traits are transmitted from one Generation to next via Genes. According to **Gregor Mendel** the inheritance of traits passed from one generation to next . The scientists of 20th Century confirm that the Genes are transmitted up to 21 Generations. The influence of genes is continued up to 21 Generations. This is explicated in Thiruvāsagam very long back.

“**MoovēzhsutrammuranurunaragidaiAāzhāmearul - (Portrithiruagaval - 118- 119)**

Heremoovēzh means (3 X 7) =21sutram is relations (generations) . It is speaking about the successive 21birth rounds of human (because of Genes) in this World.

The following terms are used for Genetic Transmission

- 1) Vazhiadiyōm – 165 (Thiruvembāvāi)
- 2) Vazhiadiyār – 266
- 3) Pazhavinai – 282
- 4) Uzhimudhal– 327





Genes

:Medical science and Thiruvāsagam :

Thiruvāsagam describes the growth and development of an Embryo in Human in ameliorate manner. After fertilization(Union of Sperm and Egg in Ovum) fetal development begins from the ninth week and continues until birth.Thiruvāsagam speaks about the risk factors during fetal development up to 10 months.

Mānudapirappinulmādhāudharatthu
 Eēnamilkirumiseruviniipizhaitthum
 Orumadhithāndriyininurumaiyipizhaitthum
 Irumadhivilaivinorumaiyipizhaitthum
 Eēriruthingalilpērirulpizhaitthum
 Anjuthingalilmunjudhalpizhaitthum
 Aāruthingalilooralapizhaitthum
 Eēzhuthingalilhāzhpupizhaitthum
 Ettuthingalilkattamupizhaitthum
 Onebadhilvarutharuthunbamumpizhaitthum

Thakkadasamadhithāyoduthānpadum

Thukkasāgarathuyaridaipizhaitthum(Pottri - 13 – 25).

It explains the embryonic development and the risk factors overcome by Human embryo during birth process.. In the above

Mānudapirappu - is human birth

mādhāudhiram - is ovum

kirumiseru - is sperm

orumadhi - First month after fertilization

irumadhi - second month

mummadhi - third month.

Ireruthingal - Fourth month.

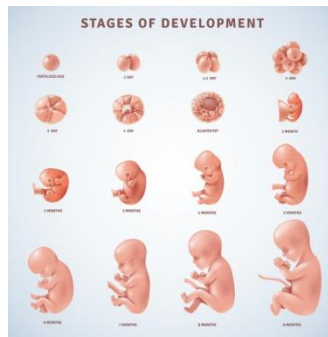
Anju thingal - Fifth month.



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Aāruthingal - Sixth Month.
 Eēzhuthingal - Seventh Month
 Ettuthingal - Eighth Month.
 Onebadhu- Ninth Month .

In the above the word “pizhaithum “ refers to escapism or to get away from the ailment. Like that he speaks about the disorders and ailments which affects the embryo till 10 months. It also refers to the 270 days of full fetal development which is a perfect calculation with respect to **moon not to Sun**. This is one of the perfect calculation in medical science



Embryonic development

Atomic Science and Thiruvāsagam :Thiruvāsagam speaks about Atom as **Anu**. Mānikkavāsagar praises its minute nature and its existence all over the world to God.

- 1) AnuvePōtri – 4-112 Praises Lord isas biggest like Universe and smallest like Atom.
- 2) Anutharumthanmaiyl – 3.45 Here it praises Lord as more subtle than an Atom .
- 3) Thun anupuraiya- 3.2- Like Atom he dwells all over the world .

Mānikkavāsagar and Dalton:1) SendrusendruanuvāiTheindhuTheindhu – 394 Here he explains Atom can be further divided into tiny particles by saying**theindutheindu** which means further decreased. So through these linesMānikkavāsagar denies the Daltons Atomic Theorythat Atom can neither becreated nor destroyed Today the scientistsaysan**Atomis** the smallest unit into which matter **can be divided** without the release of electrically charged particles. Hence Thiruvāsagam clearly explains the divisible nature of Atom in the very early period of 9 th century itself .

Conclusion : From the above we can come to a conclusion that thoughThiruvāsagam belongs to divine and Bakti literature , it can be considered as a**Science text**with a combination of different sciences likePhysics, Astrophysics, , Space Science, Medical science, Genetics, Mathematical Science ,



Evolutionary Science Atomic science and perspectives to make a complex as a whole. It establishes Mānikkavāsagar's diverse personality and his expertise in multiple areas.

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