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Donkeys, also called burros and asses, are found throughout the world. They are members of the Equidae family, which also includes horses and zebras. They look a lot like their cousins, but have long, floppy ears and tend to be stockier than horses or zebras. It is known to have been used as a beast of burden since 4000 BCE. The average donkey stands 101.6 cm (40 inches) at the shoulder, but different breeds vary greatly. The Sicilian donkey reaches only about 61 cm (24 inches), while the large ass of Majorca stands at about 157.5 cm (62 inches), and the American ass has been measured to 167.6 cm (66 inches).

In color the donkey ranges from white to gray or black and usually has a dark stripe from mane to tail and a crosswise stripe on the shoulders. The mane is short and upright and the tail, with long hairs only at the end, is more cow-like than horse-like. The very long ears are dark at the base and tip. Although slower than horses, donkeys are surefooted and can carry heavy loads over rough terrain. The mule is a hybrid, the offspring of the mating of a male (jackass, or jack) donkey and a female horse. In some parts of the world where horses cannot easily survive or where extreme poverty prevents locals from owning horses, donkeys are the main beasts of burden and source of transportation.

Thanks to China’s voracious appetite for the animal and an insatiable Chinese market for donkey pelts, the donkey is an endangered species. Since ancient times the Chinese have consumed donkey, but China no longer has enough of them to satisfy its thirst for the donkey pelt juice containing gelatin called ejiao. China needs at least 4 million donkey pelts per year, but produces only 1.8 million, requiring about 2.2 million pelts imported by stealing and brutally killing donkeys around the world.

Kenya’s donkey population has fallen by half to 900,000 since 2009. From 2011 to 2016, the number of donkeys fell by 60% in Botswana and a fifth in Lesotho. In Kyrgyzstan and India, the donkey populations fell by 20% during 2015 and 2016 alone. Colombia about 10% and Brazil about 5% over the same period transported more than 1,000 km for slaughter. Thieves are stealing donkeys taking advantage of the surging prices, leaving farmers without their most prized slave laborers, forcing 15 countries to curb the donkey trade by refusing permits for exports. In 2015, Pakistan became the first country to ban the export of donkey hides. Several African countries, including Botswana, now prohibit exports to China.

Gelatin is a hydrocolloid useful due to its high melting and gelling points and thermo-reversibility. It is a high molecular weight and water-soluble protein. All the amino acids are present in gelatin except cysteine and have low in methionine, cystine and tyrosine due to the degradation during hydrolysis. The amino acid composition and sequence in gelatin are different from one source to another but always consists of large amounts of glycine, proline and...
hydroxyproline. It is repeated with typical sequence, Gly-X-Y where glycine is the most abundant amino acid in gelatin; X and Y are proline and hydroxyproline. The chemical properties of gelatin vary by amino acid composition and the molecular weight that depend on extraction conditions, animal species, and the tissue. The molecular weight of the donkey gelatin is about 200-3000 Da. Sequence analysis can be used to ensure genuine donkey gelatin.

Ejiao is an elixir of donkey gelatin used for treating conditions from common colds to impotence in China. In March, police in Shanghai arrested 36 people for selling ejiao obtained from other sources and seized products worth 40 m Yuans (almost $ 6.3m) made from beef leather. The Donkey Sanctuary is a charity formed to protect the donkey from extinction and lobbying for an immediate ban on the donkey trade, while the Chinese government reduced the tariff on imports of donkey pelts from 5% to 2% to keep its rich middle class population happy and content. Who says China is not a democracy interested in making its subjects happy and contented practicing their ancient carnivorous traditions and satisfying the demands of Chinese who believe in miracle elixir from donkey hide?

Donkey therapy helps autistic young adults. The Donkey Sanctuary has six centers around the UK offering Donkey-Facilitated Learning sessions. The sessions use a calm and mindful approach to bring people and donkeys together, and provide opportunities for emotional connection, social interaction, communication and confidence building. Donkeys are social and very aware of their environment and the people within it. People that may struggle to communicate and connect emotionally with others somehow seem to be able to connect with donkeys.
SUSTAINABLE ENERGY

mokamak

The pursuit of fusion energy embraces the challenge of bringing the energy-producing power of a star to earth for the benefit of humankind12.

Fusion is the process of production of energy by fusing together light atoms, such as hydrogen, at the extremely high pressures and temperatures (15 million °C), which powers the sun and the stars and makes all life on earth possible. At the high temperatures experienced in the sun, any gas becomes plasma, the fourth state of matter, an electrically-charged gas in which the negatively charged electrons in atoms are completely separated from the positively charged atomic nuclei (or ions). Although plasma is rarely found on earth, it is estimated that more than 99% of the universe exists as plasma.

In this process, gases need to be heated to extremely high temperatures of about 150 million degrees °C whereby atoms become completely ionized.

A simple example is the fusion reaction between two hydrogen isotopes deuterium and tritium forming a helium nucleus, a neutron, and energy.

Fusion energy has the potential to provide a sustainable solution to the ever-increasing global energy needs. In Europe, nearly 2000 scientists and engineers are currently working on a broad range of fusion R&D projects in more than 20 laboratories including the world’s largest fusion device Joint European Torus (JET)13 that produced fusion energy and achieved the world record for fusion power.
The tokamak, a torus-shaped (doughnut-shaped) magnetic chamber, is the most developed magnetic confinement system and is the basis for the design of future fusion reactors using this method. It was invented in the Soviet Union during the 1960s and soon adopted by researchers around the world. The Joint European Torus (JET – pictured), located at Culham Centre for Fusion Energy, is the largest and most powerful tokamak currently operating.

**Inertial Confinement Fusion (ICF):** A tiny sphere (capsule or pellet), ranging in size from a pinhead to a small pea, is filled with a mixture of deuterium (D) and tritium (T) and is subjected to a sudden application of high temperature and intense pressure provided either directly by the light of a laser, by the conversion of laser light into x-rays, or by an x-ray generating device such as a Z-pinch machine. This pressure forces rapid heating and a subsequent ablation (blow-off) of some of the material of the outer layer of the capsule/pellet, producing an opposing force (rocket effect) that results in a fast inward compression of the remaining material that heats the interior of the fuel (D and T) forcing the two isotopes to fuse (ignition), which spreads to the remaining fuel and generates additional energy that blows the capsule apart. Thermonuclear fusion by inertial confinement offers the prospect of a long-term energy source based on a secure and essentially limitless fuel. In many respects, this process is similar to the process by which the Sun produces its energy, though the Sun system uses gravitational confinement.
Magnetized Target Fusion (MTF)\(^1\) is a propulsion technique that combines features from both MCF and ICF approaches and capitalizes on research results in both areas. The MTF technique offers the promise of both high specific impulse and low dry mass; as such it is well suited to the demands of high delta-v travel to the outer solar system, including human exploration missions. The work reported in this paper was carried out as part of the Human Outer Planet Exploration (HOPE) study, part of the Revolutionary Aerospace Concepts (RASC) program. The HOPE objective was to design a vehicle capable of conducting a human exploration mission of the Jovian moon Callisto. The MTF propulsion system design, as reported here, was developed to satisfy the requirements of this mission. Details of the mission and vehicle are reported separately (Adam, 2003).

Lockheed Martin\(^2\) has obtained a patent associated with its design for a potentially revolutionary compact fusion reactor (CFR)\(^3\), entitled, Encapsulating Magnetic Fields for Plasma Confinement Fusion Power, which is about the power that is generated by a nuclear fusion process in which two or more atomic nuclei collide at very high speed and join to form a new type of atomic nucleus.
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<td>**Chief Editor: శ్రీపటం పండిత్ స్వామిత్వస్తున్ని శాలాసంస్థ</td>
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**NOTES AND REFERENCES**

1. DONKEY MAMMAL
2. Donkey skins are the new ivory.
3. At the Oxford Univ Animal Ethics conference, a presentation by the www.thedonkeysanctuary.org.uk/ brought about a virtually unknown, extremely disturbing issue: DONKEY SKINS USED FOR A GELATIN (EJIO) USED IN CHINA. China’s demand for African donkeys prompts export bans.
4. Stolen African donkeys sate Chinese demand for traditional medicine
5. Donkey donkey business
6. Gelatin Derived from Beef and Pork in American Cereals

GELATIN HANDBOOK CN101664474A Traditional Chinese medicine composition containing instant donkey-hide gelatin powder and preparation method thereof
8. US 9125851, Active small-molecule donkey-hide gelatin mixture and preparation method and application thereof
9. 36 Arrested For Manufacturing And Selling Chinese Herbal Medicines.
10. Help End Cruel Donkey Meat and Skin Trade!

Donkey Sanctuary
Sellers of Donkey Gelatin, a Chinese Cure in Crisis, Seek a State Remedy
Donkeys in China tortured to make gelatin, disturbing video reveals

GRAPHIC WARNING: Click here to view PETA’s video
11. Donkey therapy helps autistic young adults.
12. Young and Old, Big and Small, Find Joy in Miniature Donkey Therapy
13. Donkey & Goats As Therapy Animals
14. Therapy Donkeys of Young’s Funny Farm
15. Donkey Therapy USA
16. Donkeys find new role as therapy animals thanks to doctor’s donkey shelter
Donkey Riding Therapy for Autism https://www.youtube.com/watch?v=mE71Iy30o6g
Donkey therapy helps Massachusetts children, adults
All Ears - Donkey Therapy Program
17. 7 Radical Energy Solutions, Made Interactive
Fusion Technology: The Challenge of Harnassing the Sun,
Why It’s Taking The US So Long To Make Fusion Energy Work
18. Toroidal magnetic confinement fusion’ is the advanced technology that is the main approach for European fusion research and is at the heart of the ITER experiment. http://www.nsfusionenergy.europa.eu/understandingfusion/technology.aspx
19. Upgraded Russian tokamak T-15 launch in 2018
21. Tokamak foundation in USSR/Russia 1950–1990: In the USSR, nuclear fusion research began in 1950 with the work of I.E. Tamm, A.D. Sakharov and colleagues. They formulated the principles of magnetic confinement of high-temperature plasmas, that would allow the development of a thermonuclear reactor. Following this, experimental research on plasma initiation and heating in toroidal systems began in 1951 at the Kurchatov Institute. From the very first devices with vessels made of glass, porcelain or metal with insulating inserts, work progressed to the operation of the first tokamak, T-1, in 1958. More machines followed and the first international collaboration in nuclear fusion, on the T-3 tokamak, established the tokamak as a promising option for magnetic confinement. Experiments continued and specialized machines were developed to test separately improvements to the tokamak concept needed for the production of energy. At the same time, research into plasma physics and tokamak theory was being undertaken which provides the basis for modern theoretical work. Since then, the tokamak concept has been refined by a worldwide effort and today we look forward to the successful operation of ITER.
22. Why Magnetized Target Fusion Offers A Low-Cost Development Path for Fusion Energy
23. Compact Fusion

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In addition to the primary sources cited above, additional references include:


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“Where the mind is without fear and the head is held high, Where knowledge is free, Where the world has not been broken up into fragments, By narrow domestic walls.”

-- Rabindranath Tagore (1861–1941), Gitanjali, 1912.

Omit Atoma Sadagamiya, Tamasama Jyotirgamaya, Mridumma Amrtamamayya, Om Shanthi, Shanthi, Shanthi!

Aum lead the world from wrong path to the right path, from ignorance to knowledge, from mortality to immortality, and peace!

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