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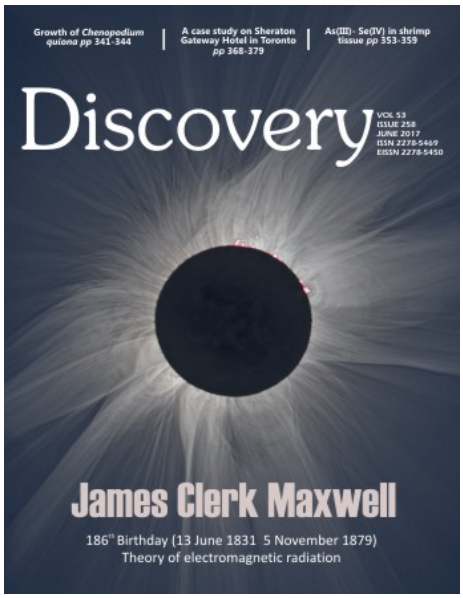
Discovery

About the Cover



CELEBRITY OF THE MONTH

James Clerk Maxwell
186th Birthday (13 June 1831 – 5 November 1879)
Theory of electromagnetic radiation

James Clerk Maxwell was born in Edinburgh, Scotland, on June 13, 1831. He was the only child of John Clerk, an Edinburgh lawyer. He was a Scottish physicist best known for his formulation of electromagnetic theory. He is regarded by most modern physicists as the scientist of the 19th century who had the greatest influence on 20th-century physics, and he is ranked with Sir Isaac Newton and Albert Einstein for the fundamental nature of his contributions. He was one of the greatest scientists who have ever lived. He is rightly acclaimed as the father of modern physics. He also made fundamental contributions to mathematics, astronomy and engineering. His research on electromagnetism established him among the great scientists of history. In the preface to his Treatise on Electricity and Magnetism (1873), the best exposition of his theory, he stated that his major task was to convert Faraday's physical ideas into mathematical form. He showed that magnetism, electricity, and light were simply different manifestations of the same fundamental laws. He used mathematics to investigate the fundamental causes of electrical and magnetic behaviour. His theory suggested that electromagnetic waves could be generated in a laboratory, a possibility first demonstrated by Heinrich Hertz in 1887, eight years after Maxwell's death. The resulting radio industry with its many applications thus has its origin in Maxwell's publications. He died in Cambridge, England, on November 5, 1879, from abdominal cancer. His discoveries paved the way for much of the modern world's technological innovations and continued to influence physics well into the next century, with thinkers like Albert Einstein praising him for his indispensable contributions. Maxwell's original house, now a museum, is the site of the James Clerk Maxwell Foundation. He received no public honours and was buried quietly in a small churchyard in the village of Parton, in Scotland (Image: www.nasa.gov).

ANALYSIS

Growth of *Chenopodium quiona* Wild under Naturally Salt Affected Soils

Muhammad Arshad Ullah, Muhammad Suhaib, RaheelBaber, Malik Usama, Badar-uz-Zaman, Imdad Ali Mahmood, Syed Ishtiaq Hyder

Salinity and sodicity is today one of the most shocking threat in the irrigated agriculture. Mostly this is an abiotic strain that influences germination and plant growth. Quinoa (*Chenopodium quinoa* Wild.) has garnered much attention in recent years because it is an excellent source of plant-based protein and is highly tolerance of soil salinity and sodicity. Protein content in most quinoa accessions has been reported to range from 12 to 17%, depending on variety, environment, and input sit is traditionally called the mother of grains having the potential to habitat under high saline sodic conditions environment. The aim of the present protocol was to investigate the germination and growth of quinoa plant under different naturally salt affected soils. Quiona weeds were sown in different salt affected soils comparing with a normal soil. A pot experiment was planned using randomized complete block design with three replicates. Non- significant results regarding germination among different naturally salt affected and normal soils was determined However germination percentage was reduced to 66.8 % by $soil_5$ having (SAR= 37.2). In other words Quinoa seeds were germinated up to (SAR= 37.2). Results of Quinoa plant height, fresh weight, and dry weight after two weeks were significantly affected by different naturally salt affected and normal soils. This study revealed the quiona growth was inversely proportional to the sodium absorption ratio. Reduction in growth parameters was associated with increasing trend of SAR due to the presence of excessive salts in plant tissues.

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Bacteriological analysis of chicken parts of fresh and frozen poultry chicken sold in Gombe metropolis, Nigeria

Suleiman MA, Wasa AA, Na'ilatu MI, Inusa Titus, Salawudeen Adamu

This study was aimed to comparatively analyze bacteria associated with fresh and frozen poultry chicken parts (gizzard, head and leg) sold in Gombe metropolis, Nigeria. A total number of thirty- six (36) samples were collected randomly from six (6) different retail outlets within Gombe metropolis. During this study a total number of five (5) bacteria genera were isolated and identified. The identified bacteria genera were E. col (21%; 26.9%), Staphylococcus aureus (24%; 30.9%), Salmonella spp (30%; 19.5%), Listeria monocytogens (8.9%; 8.0%), and Staphylococcus epidermidis (15%; 14.6%) for both fresh and frozen poultry chicken respectively. The mean value of the total aerobic bacteria count of the chicken parts analysed showed $5.30x10^5$; $4.60x10^4$ for gizzard, $3.20x10^5$; $3.71x10^4$ for head and $3.10x10^5$; $4.55x10^4$ for leg of both frozen and fresh poultry chicken' parts. It was shown that the gizzard contained more bacteria than both the head and the leg for both the frozen and fresh chicken parts analysed. More also the frozen chicken parts were more heavily contaminated than the fresh chicken parts. In conclusion, the contamination of the poultry chicken might be due to poor unhygienic habit observed during slaughtering, processing and storage.

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RESEARCH

A convenient digestion method coupled to voltammetry method for simultaneous determination As(III)- Se(IV) in shrimp tissue

Hosseinkhezri P, Takhsha M

Shrimp tissue (*penaeus semisulcatus*) was analyzed for simultaneous determination arsenic(III)-selenium(IV) by differential pulse cathodic stripping voltammetry, after digestion methods by various materials. Wet digestion methods with concentrated acids and alkaline treatments tested. Different approaches in digestion protocols were assessed. Best results were obtained by digesting shrimp tissue with nitric acid/ perchloric acid/sulfuric acid mixture followed by solid phase (SP) purification of the digested material. In order to quantitative extraction from shrimp muscle of the target analyte, with short times, high sensitivity and avoiding organic residues eventually affecting electrochemical measurements. Finally, the method has been validated by analyzing certified reference material, DORM-2 (dogfish muscle). Recoveries other digestion methods were low, apparently because of incomplete destruction of organic matter and losses caused by volatilization of selenium and arsenic.

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Quality assessment and occurrence of resistant Bacterial pathogens in gelatin production in Leather and Pharmaceutical industries and their effect to humans

Emmanuel SD, Adamu IK, Mohammed SY, Yabaya A, Ja'afaru MI, Bobai M, Blessing Y

The present study was undertaken to determine the bacteriological analysis of unsanitized quality gelatin production in leather processing in comparison pharmaceutical gelatin from different sources within the leather and pharmaceutical industries in Zaria and Kaduna environ respectively. A total of sixteen samples were designated with label on both leather and pharmaceutical gelatin (S_1-S_8). Bacteriological quality of the leather and pharmaceutical gelatin were also analyzed in-situ. The following organisms were identified viz; *Bacillus* sp, *Klebsiella* sp, *Prosteus* sp, *Enterobacter* sp, *Pseudomonas* sp and *Clostridium* sp. The percentage resistant

occurrences of the pathogens in respective gelatin water samples were also noted. Only few of the samples comply with the WHO standard while other could not. There were higher contaminants in leather processing than for pharmaceutical gelatin processing. The most frequent resistants sp were the spore formers ie *Bacillus* and *Clostridium* sp. *Bacillus* sp ranges from (31.57-39.53%) followed by *Clostrdium* sp (23.68-27.91%) and the least were found(9.30-13.15%) from *Enterobacter* and *Pseudomonas* sp. The presence of these pathogens has indeed become hindrance and problematic in the production of good standard and technical grade gelatin from leather and pharmaceutical industries. Since gelatin served as a bi- product of tissue skin from hides and bone of cow is commonly use during the production of various food processing industries. It is a must to incorporate in a well founded management system by its highly sanitized condition and hence are generally accepted among customers, their usefulness for quality control management is often limited both economically and scientifically. The case study was concentrated mainly on the frequency and occurrence of bacterial pathogens and other less resistant member of pathogens which are prompt to potent causative agent in food spoilage, poisoning, food borne disease and their health hazard to humans are discussed in-situ.

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CASE STUDY

Housekeeping management, supply chain, engineering and logistics operations establish a good technical maintenance in hospitality industry - A case study on Sheraton Gateway Hotel in Toronto Pearson International Airport, Toronto, Canada

Greg MacNeil, Gazi Farok

Housekeeping is the major practice for the *hospitality industry* which is mainly a service *industry.* Hospitality industry includes an imaging services to restaurants, *lodging*, event planning, theme parks, transportation, cruise line, tourism *industry etc. Now days, housekeeping is a dynamic and vibrant industry. It has different* facility maintenances and direct operations with technology, engineering, housekeeping, kitchen workers, marketing, human resources, bartenders and supply chain logistic management.

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