

XXIV. ZBORNÍK DEJÍN FYZIKY

Abstracts

SUPERNOVA SN 1006

RNDR. MIROSLAV RANDA, PH.D.

Západočeská univerzita v Plzni, ČR

ZUSAMMENFASSUNG

Dieser Artikel beschreibt Beobachtungen der Supernova, die im Jahre 1006 im Sternbild Wolf explodierte. Diese Supernova war einige Monate am Himmel sichtbar. Sie war im Maximum etwa dreimal heller als Venus und wurde in Europe, Asien, Afrika und wahrscheinlich auch in Amerika beobachtet. Erst im Jahre 1968 wurde der Überrest dieser Supernova SN 1006 im Radiobereich entdeckt.

OLE RØMER A JEHO METODA DOKAZUJÍCÍ KONEČNOU RYCHLOST SVETLA

JIŘÍ PRCHLÍK

Západočeská univerzita v Plzni, ČR

ABSTRACT

Ole Rømer and his method demonstrative finite of speed of light

This article describes the history of 17th century about Rømer's discovery. There is also principle and technical issue of Rømer's method described. You can find Czech translation of original article published by Journal des Scavans, in which Rømer first presented his method.

JUAN CARAMUEL Z LOBKOWICZ (1606 – 1682)

KAREL MAČÁK

Technická univerzita Liberec, ČR

ABSTRACT

Juan Caramuel Lobkowicz (1606 – 1682)

Caramuel's work "Mathesis biceps, vetus et nova" is shortly characterized and a part of it (the "Syntagma IV") is treated a little more in details.

POČIATKY VEDECKÉHO ZÁUJMU O ELEKTRICKÉ JAVY V UHORSKU MIROSLAV TIBOR MOROVICS

ANDREJ ŠPERKA

Historický ústav SAV, Bratislava, SR

ABSTRACT

The beginnings of scientific interests in electrical phenomena in Hungarian Kingdom

The electricity science is considered scientific discipline, whose intensive and profiling development was commenced in the 18th century. Unlike mechanics, acoustics, optics and severeral others, its specificity lies upon the fact that its characteristic qualities, apart from the atmospheric electricity, can hardly be percieved by our senses for it does not exist naturally. While the examining mechanical and related phenomena based on the sensory perception creates plenty of space for speculative interpretation, research into electrical effects requires experimental methodology and suitable equipment. Beginnings of scientific interests in electrical phenomena also attract attention for its part in the process of forcing

speculative pseudo-Aristotelian physics out to be replaced by progressive experimental methodology. As long as in the area of mechanics, astronomy and similar disciplines the former process took long time to succeed, in the 18th century several Hungarian scholars were quick to react properly to the pioneering discoveries in static or atmospheric electricity including Galvani's and Volta's. Although in Hungarian Kingdom neither the favourable conditions for scientific research in the area of physics were created in the meantime, nor the emerging interest in electricity produced any significant discovery, this kind of knowledge became an organic part of schooling at Jesuit universities and Protestant colleges and forced the way for substantial changes in science in the 19th century. The paper is dedicated to the initial writings and authors who were responsible for introducing problems of electricity into the scientific and textbook literature in Hungarian Kingdom during the 18th and the beginning of the 19th centuries (I. Purgina, S. Hatvani, A. Horányi, P. Makó and others).

**MICHAEL FARADAY (1791 – 1867) –
TVŮRCE NOVÉHO FYZIKÁLNÍHO OBRAZU SVĚTA
RUDOLF KOLOMÝ**

Moravská Třebová, ČR

ABSTRACT

Michael Faraday (1791 – 1867) – the creator of a new physical picture of the world

At first there is a description of the life story of Michael Faraday in my article. Next it deals with the discovery of electromagnetic induction (1831) – the fundamental discovery which has started the current development of electrical engineering. After that there is an introduction of Faraday's conception of electromagnetic field. It seems to be essential for this item to speak here also about Faraday's work in electrochemistry which is summarized into two laws called after its author. Some other contributions of M. Faraday into the world science heritage are: the discovery of diamagnetism and paramagnetism, the discovery and the experimental proof of charge conservation principle (1843), the discovery of magneto-optical effect (1845), the studies of the influence of dielectric on the electric capacity of the capacitor and on the electric interaction, the introduction of expressions like permittivity and permeability etc. M. Faraday was a unique character in a scientific world considering the depth of his thoughts and the range of his scientific work as well. His life work consisting of three volumes "Experimental Researches in Electricity" (1839, 1844, 1855) has become an essential source of new ideas for the research of many next generations of physicists.

**NOBELOVY CENY, NOSITELKY HISTORIE FYZIKÁLNĚ TECHNICKÝCH VĚD
VE 20. STOLETÍ**

LUBOMÍR SODOMKA

Technická univerzita Liberec, ČR

ABSTRACT

Nobel prizes winners of history physical and technical sciences in 20th century

In prehistory and far history wearers of science progress there are individuals. Only at the end of 19th and during the 20th century the science began made in scientific institute and collectively. The scientific results have been estimated through history. At beginning of 20th century the scientific results of natural sciences have been evaluated professionally using the Nobel prizes established by Alfred Nobel. So the Nobel prizes and Nobel prize winners have been got with their discoveries the wearers of history of physics, chemistry, physiology and medicine and also of literature and of peace efforts, what is the object of this contribution showing the history of Nobel disciplines as the history of Nobel prizes and Nobel prizes discoveries.

HRADECKÉ VODNÍ ELEKTRÁRNY

JOSEF HUBENÁK

Univerzita Hradec Králové, ČR

ZUSAMMENFASSUNG

Alte Wasserkraftanlagen in der Stadt Hradec Králové - Hucák, Mlejnek und Orlická - wurden in Jahren 1913 bis 1922 gebaut. Alle drei Kraftwerke arbeiten ganz zuverlässig 80- 90 Jahre. Ihre Flusswehre sind interessante technische Werke, ihre Gebäude stellen spezifische Industrie-Baukunst dar, aber das ist alles, was ein Besucher von aussen sehen kann. Wirkliche Schätze sind im Innern: Franzis- und Kaplanturbinen, alte Drehstromgeneratoren und Erregermaschinen, grosse Drehzahlregler und andere Maschinen zeigen uns noch heute technische Kenntnisse und den Mut der Ingenieuren vom Anfang des 20. Jahrhunderts. Der Artikel trägt nur irgendwelche Auskünfte an und ladet zu Besuch. Eine Exkursion ist heute möglich dank der Firma I.elektřarenská České Budejovice s.r.o. und der Firma Východočeská Energetika, a.s.

ELEKTRIFIKAČNÝ PROCES NA VÝCHODNOM SLOVENSKU V ROKOCH 1929-1945

MIROSLAV SABOL

Historický ústav SAV, Bratislava, SR

ZUSAMMENFASSUNG:

Die elektrische Energie wurde in den ostslowakischen Bergbaugebieten (d. H. Spiš, Gemer) Ende 19. Jahrhunderts zum ersten mal benutzt. In der Zeit zwischen zwei Weltkriegen hatte die West- und Mittelslowakei eine Vorsprung was die Benutzung von elektrischer Energie betrifft. Die Ostslowakische Elektrizitätswerke waren auch als letzte im 1929 gegründet. Die Hauptaufgabe dieses Betriebs war, die größte Teil Slowakeis zu elektrifizieren. Dieser Prozess war aber wegen finanziellen Probleme und hohen Kosten von Stromleitung, sehr langsam. Und das auch trotz der Tatsache, dass im Krompachy wurde im 1939 ein modernes und leistungsstarkes Thermokraftwerk geöffnet. Die Städte und größeren Dörfer wurden Erst während 2. Weltkrieg elektrifiziert. Durch den Frontdurchgang waren meistens die größeren Kraftwerke in der Ostslowakei beschädigt.

GOTTFRIED WILHELM VON LEIBNIZ (1.7. 1646 LIPSKO - 14.11. 1716 HANNOVER)

INGRID HYMPÁNOVÁ

Bratislava, SR

ABSTRACT:

Gottfried Leibniz was a German mathematician who developed the present day notation for the differential and integral calculus though he never thought of the derivative as a limit. His philosophy is also important and he invented an early calculating machine. German philosopher, mathematician, and political adviser, important both as a metaphysician and as a logician and distinguished also for his independent invention of the differential and integral calculus.

ZAKLADATEL MOLEKULOVEJ TEÓRIE PLYNOV - AMEDEO AVOGADRO (1776 – 1856)

*ELENA FERENCOVÁ**

*ANNA POLÁŠKOVÁ***

** Lekárska fakulta UK, Bratislava, SR*

*** Fakulta matematiky, fyziky a informatiky UK, Bratislava, SR*

ABSTRACT:

Italian chemist who proposed Avogadro's Hypothesis, which states that equal volumes of gases under equal conditions of temperature and pressure contain equal numbers of molecules. This assumption implied that the weights of molecules were proportional to the gas density. He also believed that certain elements in the free state existed as diatomic molecules. Avogadro's ideas were ignored until reintroduced by Cannizzaro.

A ZAKLADATEĽ SLOVENSKEHO VYSOKÉHO ŠKOLSTVA

JÚLIUS SUJA-ŽIAK

Martin, SR

ZUSAMMENFASSUNG

Jur Hronec (1881–1959) war der Nestor der slowakischen Mathematiker, er war wissenschaftlich tätig vor allem im Gebiet der Differentialgleichungen. Er hat auch wertvolle Verdienste bei der Begründung der Slowakischen Technischen Universität (damalige Dr. Milan Rastislav Štefánik's Technische Hochschule) und anderen slowakischen Hochschulen und Universitäten. Der artikel ist dem Leben und Werk des J. Hronec gewidmet.

RNDR. ELENA FILČÁKOVÁ, ASISTENTKA IRENE JOLIOT-CURIE

JANA MEŠTEROVÁ

Slovenské technické múzeum, Košice, SR

ABSTRACT

RNDR. Elena Filčáková (1902- 1983) was a profesor of physics and mathematics in Košice. She achieved a studentship UNESCO and worked in the Radio department in Paris with Irene Joliot-Curie as a directress since 1946 until 1948. She co-operated also with Frederic Joliot-Curie. After her stay in Paris E. Filčáková was lecturing physics on the Czech University of Technology in Prague.

HISTORICKÉ ASPEKTY VO VYUČOVANÍ FYZIKY VLADIMÍR PLÁŠEK

Fakulta matematiky, fyziky a informatiky UK, Bratislava, SR

ABSTRACT:

This paper is about using historical approach in teaching physics. It deals with review of using history in teaching physics abroad, about two approaches that I have met with, the classical and historical approach. Then you can find here categories, that were created to sort used historical elements. In the chapter 4 man can find the example of lesson, where historical aspects are used and in chapter 5 the example of historical list, which can be used on the lesson. The last chapter build the results of the review among 50 high and elementary teachers, how they use historical elements in their education process.