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**ENGLISH TITLES**

**BIOLOGY**

**Antibacterial potential of crude ethanol and methanol extracts of Yemeni medicinal plants against some pathogenic bacteria**

**A.A.H. Alafoori and N.H.A. Nagi**

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**Abstract**

Medicinal plants are a rich source of antibacterial agents which could be exploited in human and plant disease management. The leaves of *Acalypha fruticosa*, *Azadirachta indica*, *Annona squamosa*, *Nerium oleander*, *Psidium guajava* (guava), *Rumex nervosus*, *Ziziphus spina-christi*, and *Cissus quadrangularis*, in addition to *Negilla sativa*'s seeds, were extracted successively with ethanol and methanol solvents. The extracts were tested in vitro for activity against four Gram negative and three Gram positive bacteria, namely *Proteus mirabilis*, *Klebsiella pneumoniae*, *Salmonella typhimurium*, *Bacillus subtilis*, *Staphylococcus albus*, *Bacillus cereus* and *Micrococcus roseus*, respectively. The zones of growth inhibition were determined by using agar well diffusion assay method through nutrient agar medium. The in vitro antibacterial screening revealed that plant ethanol and methanol extracts exhibited various activities on the sensitive bacterial pathogens at the tested concentration with zones of inhibition ranging from 9 to 25 mm, in case of plant ethanol extract, while methanol extract efficacy ranged from 8 to 25 mm. The bacterial pathogens, *M. roseus*, *S. albus*, and *B. cereus*, showed pronounced susceptibility to the test of plant ethanol and methanol extracts respectively, while the bacterial strain *P. mirabilis* are considered more resistant, compared to all other tested bacterial pathogens used in the current study. The pronounced efficacy of plant extracts against the selected bacterial pathogens was exhibited from *N. oleander*, *P. guajava*, *R. nervosus*, *A. fruticosa*, *A.*

sguamosa, *N. sativa*, and *Z. spina-christi* respectively. This study supports, the traditional medicines (herbal extracts) to cure many diseases, like diarrhea, intestinal tract, throat, ear infections, fever and skin diseases.

**Key words:** Medicinal plants, antibacterial activity, pathogen, zone inhibition.

## **ENGINEERING**

### **Wind as a natural source of energy in Socotra Island, Yemen**

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#### **Abstract**

The aim of this study is to use alternative sources of energy to maintain and to protect the island's environment from gaseous pollutants emitted by conventional power plants. This type of source will help in reducing the cost of energy requirements of fuel, regular maintenance and others that cause financial burden on the government and thus reflects to the public. Based on the objective of the study, the method of writing and preparation of the study required access to relevant and necessary data related to the wind speed and direction, as well as temperature and atmospheric pressure obtained from the Weather Station in the Airport of Socotra Island through the Civil Aviation and Meteorology Authority (CAMA), Sana'a, to carry out necessary operations and calculations in order to determine the potential of wind and the amount of energy for a period of 5 consecutive years (2000-2004). The set of data obtained are used for the analysis, using mathematical calculation to find the monthly and annual means.

**Key words:** Yemen, wind energy, wind energy conversion, wind data.

## **ENVIRONMENT**

### **Marine plankton biodiversity during summer at Al Doema Island (Red Sea-Yemen)**

**Radwan Al-Shaibani<sup>1</sup>, Bryantceva Yulyia<sup>2</sup> and Mondher Th. A. Numan<sup>1</sup>**

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<sup>2</sup>National Academic of Science, Institute of Biology Southern Seas, Ukraine.

### Abstract

Marine planktons are the primary producers of the organic matter in the ocean and their important ecological roles are well established. They represent the base of food chains of most marine organisms such as fishes and other sea animals.

Maydi Harbor (Red sea) is undergoing strong economical and tourist activities that cause several negative ecological impacts on the surrounding environment. Furthermore, the protection of marine lives and their biodiversity conservation is of vital importance. Therefore, the present work is initiated as a part of future monitoring plan of marine ecosystem in this area. Its aim is to study the biodiversity and abundance of marine planktons in the regional sea water of Al-Doema Island in Yemen, facing Maydi Archipelago. Furthermore, the study also aims at documenting fish and other marine animals in the study area. Using a microscope equipped with a digital camera, several species of marine planktons were identified and documented from the collected sea water samples. It was found that these planktons belong to ten different main groups such as Cyanophyta, Chlorophyta, Bacillariophyta, Pyrrophyta, Ciliophora, Arthropoda, Tunicata, Nematoda, Sarcodina, and Rotifera. Moreover, many commercial fishes, mollusks and crustaceans were found in the study area.

**Key words:** Biodiversity, Plankton, Al-Doema Island, Yemen.

## MATHEMATICS

### Cofinitely $\delta_M$ – Lifting Modules

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### Abstract

Let  $M$  be a right  $R$  – module. In this paper cofinitely  $\delta_M$  -lifting modules are introduced, as a generalization of lifting modules in  $\sigma[M]$ , and are characterized. We prove that some results of lifting modules are extended to cofinitely  $\delta_M$  -lifting. Also, we investigate the interconnections between cofinitely  $\delta_M$  -lifting,  $\oplus$ -cofinitely  $\delta_M$  - supplemented modules and cofinitely  $\delta_M$  - semiperfect modules.

**Key words:**  $\delta_M$  – small submodules, cofinite submodules,  $\delta_M$  – lifting modules.

## Fuzzy inner product space of fuzzy matrices

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### Abstract

The concept of fuzzy inner product space in a vector space of fuzzy matrices has been introduced and the fuzzy Schwarz inequality of fuzzy inner products of fuzzy matrices has been given. Also, the fuzzy norm, orthogonal fuzzy matrix and similar fuzzy matrices were defined and some results on these concepts were proved.

**Key words:** Fuzzy real numbers, Fuzzy matrix, Fuzzy inner product space, orthogonal fuzzy matrix.

## MEDICINE

### Otomycosis among patients in a private ENT-Clinic, Mukalla, Yemen

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<sup>3</sup>Department of Community Medicine and Public Health, Faculty of Medicine, University of Aden

### Abstract

Otomycosis is a prevalent fungal infection of external ear that is seen in tropical and subtropical climates of the world. The study aimed to find out the frequency of external ear otomycosis among patients in a private ENT Clinic, in Mukalla.

It was done on patients who had seen during the period January to June 2009. Thirty eight patients (12 males and 26 females) were prospectively studied with clinical diagnosis of otomycosis.

The age of the patients ranged between 3 and 70 years, with a mean age  $28.8 \pm 15.7$  years. The majority of patients [29 (76.3%)] were of the age 10 to 39 years and the difference of sex in relation to age was statistically significant ( $p < 0.05$ ). Most of the patients (76.3%) lived in Mukalla city, an urban area, ( $p < 0.05$ ). *Aspergillus niger*

was isolated in (44.7%) patients, *Candida albicans* in (39.5%) and Mixed fungal agents in (15.8%).

The most common symptoms were pruritus, pain and watery discharge.

We concluded that the study has provided some indices to the frequency of external ear otomycosis. Although this limited study established the importance of further comprehensive studies to find out the true indices of the prevalence and incidence of the different types of ear diseases, especially otomycosis in Mukalla governorate.

**Key words:** Otomycosis, frequency, private ENT Clinic, Mukalla .

## **The role of transcranial magnetic stimulation on improvement of motor deficit after a cute ischemic stroke**

**Younous Anis Bintaleb**

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Aden University**

### **Abstract**

Repetitive transcranial magnetic stimulation (rTMS) is increasingly used as a therapeutic tool in various neurological and psychiatric disorders<sup>1</sup>. In the present study, we evaluated the effect of rTMS of the primary motor cortex (M1) on motor recovery in 52 consecutive patients with acute ischemic stroke of middle cerebral artery territory as documented by computerized tomography. Patients were randomly assigned to one of two groups, the groups receiving either real-rTMS (10 trains at 3 Hz, 10 s for each train with an inter-train interval of 60 s and an intensity of 120% of resting motor threshold, using a figure of eight coil positioned over the M1 of the affected hemisphere) or sham-rTMS for 25 consecutive days. Clinical assessment of motor disability and functional activity, using the Scandinavian Stroke Scale (SSS), National Institutes of Health Stroke Scale (NIHSS) and Barthel Index Scale (BI), was done for each patient before rTMS (pre-rTMS), at the end of the last treatment session and 10 days later. Motor evoked potentials (MEP) were recorded from abductor digiti minimi at the time of each motor assessment. There were no significant differences between the two groups of patients in the pre-rTMS assessments. However, a two factor ANOVA on each of the clinical measures revealed a significant “group” X “time” interaction indicating that real and sham rTMS had

different effects on SSS, NIHSS and BI. No subject experienced adverse effects during the study. We conclude that repeated application of rTMS over the primary motor cortex of the affected hemisphere can enhance motor function recovery in patients with acute ischemic stroke.

**Key words:** Transcranial magnetic stimulation - Stroke – In patients among - Yemen.

## **Clinical and endoscopic study of gastroduodenal lesions induced by non-steroidal anti-inflammatory drugs, Aden**

**Hael Saeed Abdullah Hageb<sup>1</sup>, Abdul Samad Taresh<sup>2</sup>, Saeed Mohamed Alwan<sup>3</sup>, Yassin Abdul Kader<sup>4</sup> and Mohamed A. Aklan<sup>5</sup>**

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<sup>2</sup>Department of Community Medicine and Public Health, University of Aden

### **Abstract**

The objective of this study is to determine the pattern gastroduodenal lesions induced by NSAIDs drugs. It is a retrospective study, based on 127 patients using NSAIDs, who underwent upper digestive endoscopy at a Private Endoscopy Unit in Aden, during the years 2007 - 2010. 67 were females and 60 were males, with the mean age  $49.1 \pm 15.2$  years.

Data were analyzed, by using SPSS 17, chi-square tests, and P values were calculated, with a difference at the 5% level being regarded as significant.

The study revealed that female and male patients were predominant in the age groups 45-59 years and  $\geq 60$  years. Dyspepsia topped the groups (76%) of all clinical findings, followed by upper gastrointestinal bleeding (GIB) 21.2%.

Thirty patients (23.6%) were normal by endoscopy. The endoscopic findings were in 97 patients. The males comprised (51.5%) and females (48.5%).

Endoscopic findings comprised inflammation of esophagus, stomach and duodenum 59.8%, duodenal ulcer 28.9%, and gastric ulcer 6.2% ( $p < 0.05$ ).

We concluded that clinical and endoscopic features, NSAIDs related, are various and require further studies, due to their common use.

**Key words:** Endoscopy, gastroduodenal lesions, NSAIDs, Aden.

## **Job satisfaction among paediatric emergency health workers in Al-Wahda Teaching Hospital, Aden Governorate 2009**

**Nuha Abdul Malik Aghbari<sup>1</sup> and Rene Suarez Martinez<sup>2</sup>**

**<sup>1</sup>Department of Paediatric, <sup>2</sup>Department of Social Medicine and Public Health  
Faculty of Medicine and Health Sciences, University of Aden**

### **Abstract**

**This is a cross-sectional study among 111 health workers working in the Pediatric Emergency in Al-Wahda Teaching Hospital over a period of eight months; from 1<sup>st</sup> May – 31<sup>th</sup> December 2009. The aim of this study is to determine the overall level of job satisfaction for the pediatric emergency health workers in Al-Wahda Teaching Hospital as well as the factors influencing their job satisfaction.**

**The response rate was 100% and the overall job satisfaction among participants was moderate (3.0±1.408). There was variation in the level of satisfaction across its various work dimensions. Health workers were only satisfied with colleagues' relationship, but dissatisfied with the other aspects of work, and least satisfaction was payments.**

**We conclude that there should be an urgent call for policy makers to pay more attention to the improvement of pediatric emergency health workers conditions, including payment, opportunity to advancement, resources and other work conditions. These could result in improvement of the all overall job satisfaction in order to ensure the delivery of high quality of care to pediatric emergency patients.**

**Key words: Job satisfaction, health workers, pediatric emergency.**

## **Treatment of tuberculosis in Aden Governorate during the period: October 2006-June 2007 (A study of 450 cases)**

**Gamila Mohammed Abdo Saeed  
Department of Pharmacology, Faculty of Pharmacy, University of Aden.**

### **Abstract**

The aim of this study was to identify the effectiveness of anti-tuberculosis drugs in Aden governorate, four hundred and fifty medical records was selected from the seven regional polyclinic and TB control center in Aden city, sex, all ages group, type of tuberculosis during 9 months from October 2006 to June 2007.

We found that Al-Sheik Othman and Al-Mansoorra districts have the highest frequency of areas of TB patients in Aden governorate. 16.9 %and 16.2% respectively followed by Crater 14.9% Almalla 14.7% Darsad 14.2% the least affected area was Kormakser 6.2%.according to the sex male are more affected than female, (male 248 (55.1%), female 202 (44.9 %). Males in the age group 36-55 years showed higher frequency than females by the ration of 2:1.

Pulmonary tuberculosis (74.6%) is predominant type of tuberculosis in Aden than extrapulmonary TB (23.6%) and only (1.8%) have both types.

Sputum for acid fast bacilli was done to monitor the progression of patient's state and responsibility to drugs in pulmonary tuberculosis. At the beginning of treatment of studied cases 72% are positive and 28% are negative .After two month of treatment 223(69%) patient did not have the test done only 99(31%) of them performed and 94% of the them had negative smear while only 6 % still positive and after five months 306 (95%) did not done the test to control the effectiveness of treatment and only 16 (5%) of them had the test done of which 94% were negative only 6% were still positive smear.

**Key words:** Tuberculosis, treatment, control system.

## **ARABIC TITLES**

### **AGRICULTURE**

**Survey study on the occurrence, damage and control of the California Red Scale insect *Aonidiella aurantii* Mask (Diaspididae: Homoptera) in Abyan and Tuban Deltas, Yemen**

<sup>1</sup>Nuha T. Hariri and <sup>2</sup>S. A. Ba-Angood  
<sup>1</sup>Department of Plant Protection, El-Kod Research Station

#### Abstract

This survey study was conducted in the period December 2009- July 2010; with the aim of obtaining information on the occurrence, damage and control of the California Scale Insect *Aonidiella aurantii* Mask ( Diaspididae : Homoptera) on papaya, lemon and mango trees in Abyan and Tuban Deltas, Yemen. A questionnaire was distributed and interviews were conducted with the concerned farmers in these areas. Results were analyzed using the descriptive and analytic method. The results have shown that there are three species of scale insects in the area, namely *Aonidiella aurantii*, *A. citrine* and *Chrysomphalus aonidum*; the third was recorded for the first time in October 2009 on papaya at El-kod Research Station in the area. The pest usually preferred papaya, followed by lemon and mangoes in both Deltas. The farmers' answers the questionnaire revealed that dimethoate, malathion and sevin have been used randomly and frequently for the control of the pest. These insecticides are officially abandoned in Yemen. The pest usually appears in cold months; 6 months after seedlings they are transferred in the field in papaya, and 6 months after planting in lemon. In Delta Abyan, papaya fruits and stems are more preferred for the pest; followed by lemon leaves, and then mango leaves. In Delta Tuban, lemon leaves are preferred for the pest, followed by mango leaves. During our field visits, we noticed that the pest is more available in the southern Deltas near the coastal areas, and is less available when we go away from the coasts to the north.

**Key words:** California Red Scale insect, survey, Delta Tuban, Delta Abyan, Yemen.

### Evaluation of plant extracts as green pesticides against the growth of two species of *Aspergillus* in vivo

Mohamed Ali Al-Sunaidi

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#### Abstract

Searching for sources that may be used for integrated disease management which in turn may be considered as natural Substitutes for chemical pesticides that causes dangerous results on human health and his environment. A number of experiments were carried out at the laboratory of the Biology Department- College of Education, University of Aden, in order to evaluate the effect of Ethanol and Methanol extracts of four types of four different plant seeds: *Thevetia Thevetia neirefolia* Dature *Dature stramonium* Neem *Azadirachta indica* and *Citrullus Citrullus colonynthis* by concentration of 2%, 4%, 6%, 8% and 10% (Weight/ Size) on *Aspergillus niger* and *Aspergillus flavus*.

The experiment proved the following: Ethanol and Methanol extracts of *T.neirefolia* seeds (by concentration of 8%, 10%) showed the highest effectiveness

against the two types of *Aspergillus*, completely preventing the growth of the two *Aspergillus*. On the other, side Ethanol and Methanol extracts of *Dature stramonium* seeds (by concentration of 10%) and Ethanol and Methanol extracts of *Citrullus colonynthis* seeds (by concentration of 10%) completely prevent the growth of the Two tested *Aspergillus* species.

**Key words:** plant extracts, fungi, *Aspergillus niger*, *Aspergillus flavus*.

## **Effect of fertilization conditions on rearing honey bee (*Apis mellifera jemenitica*) queens in Abyan Governorate.**

**Ballail M. S. Kamander<sup>1</sup>, Faiza S. Abdulla<sup>2</sup> and Muhammad S. El-Sherif<sup>3</sup>**

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### **Abstract**

This research was conducted in El-kod Agric. Research Station Abyan. Southern Coastal Plain during 2010 which aimed to study fertilization conditions in the laboratory, or in the field, to obtain the best affecting rearing, producing high quality of queen honey bee (Yemen stain *Apis mellifera jemenitica*). Results indicated that fertilization conditions in the laboratory was favored in significant differences, compared to fertilization conditions in the field, for the indicators, number of successful larva , as it recorded the highest number of  $28.58 \pm$  from 45 fertilized larva, and the percentage of acceptance  $62.2 \pm 1.27\%$ , which increased 35.46 and 35.51% respectively, and highest number of virgin queens recently emerging estimated  $23.67 \pm 1.20$  from 28 successful larva and rate of emergence  $84.55 \pm 0.91\%$ , which led to an increase of 41.99% and 4.47% respectively. Highest average weight  $152 \pm 0.0091$  gm of virgin queens, recently emerged, was also recorded, with an increasing rate of 13.71%. On the other hand, the difference in size of royal house, gizzard sperm diameter and dimensions of ovary in virgin queens, did not reached the significant level, although there were slight differences in favor of fertilization conditions in the laboratory.

**Key words:** fertilization conditions, *Apis mellifera jemenitica*, virgin queens, successful larva, Southern Coastal Plain.

# **Effect of nitrogen fertilization on grain yield and some quality characters of four bread wheat cultivars (*Triticum aestivum* L.) under Delta Tuban conditions**

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<sup>2</sup>Food Sci. and Post Harvest Tech. Center- Aden. Agric. Research & Extension Authority

## **Abstract**

This investigation was carried out at the Experimental Farm of Nasser's Faculty of Agricultural Sciences, Aden University, during 2003 and 2004 growing seasons, to study the effect of nitrogen fertilization on grain yield and some quality characters of four bread wheat cultivars. Split plots design in randomized complete blocks with three replications was used, containing 16 treatments which were the combination of four wheat cultivars (Kalyansona, Hadramout, Seyoun and Hindia2) and four levels of nitrogen fertilizer ( 0,55,110 and 165 kg. N/ha.) in urea form (46% N).The results of statistical analysis (data means of both seasons) indicated that Hadramout cultivar surpassed significantly in grain yield (3.59 ton/ha), while Kalyansona was the least one (1.5 ton/ha), but it surpassed significantly in crude protein (15.42%) and wet gluten (44.67%) as compared with other cultivars.

Increasing the nitrogen levels up to 165 kg N/ha resulted in significant gradual increase in grain yield, 1000 grain weight and wet gluten, while specific weight of grain and crude protein were not significantly affected by increasing nitrogen levels.

Non significant effect was observed for interaction between cultivars and nitrogen fertilization levels on all studied characters, except grain yield, whither Hadramout cultivar gave the highest productivity (4.12 ton/ha), In addition, a high rate of nitrogen (165 kg./ha) a high surpassed significantly on all interactions.

**Key words:** bread wheat, cultivars, nitrogen fertilization, quality characters, Delta Tuban.

## **ANIMAL PRODUCTION**

### **Effect of some environmental factors on milk production of Friesian cattle under highland areas in Yemen**

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Nasser's College of Agricultural Sciences , Aden University

### **Abstract**

The present work was carried out on a herd of Friesian cattle belonged to "Alusra" milk farm, Dhamar, Yemen. 475 records of 101 milking cows, for the duration from 2003- 2007, were used to study some factors affecting total milk yield, and daily milk yield. Milk sample of 21 cows, at the production period 2008, were analyzed to determinate fat percentage.

The average of total milk yield, daily milk yield and fat percentage were 5433.30 kg, 16.56 kg and 3.32.% respectively.

Calving year affect significantly the total milk yield and daily milk yield ( $P \leq 0.01$ ), as well as the lactation period. Calving seasons affected the total milk yield but not daily milk yield. It was indicated that there was no significant effect of the lactation period and environmental temperature on fat percentage.

**Key words:** Friesian cattle; milk yield; Yemen.

## **BOTANY**

### **Response of onion cells subjected to coldness in order to reduce the cadmium toxic effect of roots growth**

**Esam Ali Abdullah Sadaqa ,Ghassan A. A. Obad and Khaled Saeed Ali Abdo**  
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### **Abstract**

Plant response to environmental stress is one of the physiological defense mechanisms to protect cells from other environmental influences. This experiment was conducted to study the ability of developing cells of onion roots that exposed to cold stress to reduce the toxicity of cadmium (5 mg / l) on root growth and the mitotic index, as well as the ability of cells exposed to the impact of cadmium for varying periods of time. the results showed that the bulbs exposed to cold for 48 hours and then treated with cadmium resisted the toxic effects of cadmium , where the percentage of root growth and the mitotic index was similar to the value of the control and it was significantly superior to the cadmium treatment. When the same concentration of cadmium has been used for varying periods of time, we observe that the cadmium toxicity on root growth increases with the increase of the time period to a certain period, then the roots regain to grow where the percentage of growth inhibition, after 48 hours is approximately (52%). The highest percentage of inhibition, after 96 hours, reached (63%) by cadmium effect, then decreased to (49%) after 120 hours. This illustrates the ability of cells to reduce the impact of environmental stress by certain physiological mechanisms.

**Key words:** Cadmium, Onion, Mitotic index, Root length.

# **ENVIRONMENT**

## **Vegetative cover of the area north of Lauder – Abyan Governorate**

**Yaser K. Nasser, Mahmoud A. Salem and Mohammed A. Hussein  
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Dept. of Biology, College of Education, Zingibar  
Dept. of Biodiversity, Centre for Environmental Studies and Research, Aden  
University**

### **Abstract**

The study area is characterized by low and irregular rainfall, so it is predominantly semi-desert and desert. It is hot in summer and temperate in winter, but the nature of the topographic configuration along with its climate contributed to the constitution of a scattered composition of vegetation predominated by shrubs in its general appearance. During the field survey, 118 plant species were identified as belonging to 84 genera and consolidating 37 families. Convergence of some families in the presence of their genera and species so, Asteraceae is considered as more factions attended in general, followed by Asclepediaceae. According to phenotypic herbaceous plants represented by 56 species 37species shrub and grass, and 8 species, trees 8 species, dwarf shrubs 7 species and 2 species of Parasitic plant.

**Key words:** Topography, arid zone, shrub, Plant vegetation.

## **Natural plants of medicinal use in Delta Abyan, Yemen**

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<sup>1,2</sup> Biology Dept. College of Education- Zingibar, Aden University  
<sup>1</sup> Biodiversity dept. Environmental studies , Aden University**

### **Abstract**

Since centuries, plant kingdom has been the sole source of treatment for human. He has used plants growing around and has experienced their benefits and quality. He has also learned, when tasting the plants, that some cause illness and other cause recovery from several diseases such as pain, fever, headache, Stomach ache etc. In Abyan Delta, he has benefited from the exchange of popular heritage of therapeutic use of plants for the treatment of many diseases

The attached table illustrates the extent of using plants in curing such diseases in Abyan Delta. 42 plant species belong to 39 genera and are consolidating 23 families varied in their use (external or internal) and differed in their percentage according to

the medicinal content of the plant. All are of medical value and considered beneficial to human.

**Key words:** Disease, drugs, medicinal plants, plant kingdom.

## **ENGINEERING**

### **Originality and architectural identity of the historical monuments in Aden city**

**Mohammed Hamood Ahmed Al-Kibssi and Marseel Mahmood Yaqoob Khan**  
**Originality and architectural identity of the historical monuments in Aden city**  
**Mohammed Hamood Ahmed Al-Kibssi\* and Marseel Mahmood Yaqoob Khan\*\***  
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#### **Abstract**

Aden city is the most beautiful city in Yemen at all because of its traditional and architectural heritage on one hand and, on the other hand, the modern urban origins and planning. Aden has an important geographical location in the international shipping routes, as well as lots of architectural and historical monuments that confirm the extent of the long history of this city and its architectural and cultural heritage. The lack of the of maintenance during their removal (demolition) and the exploitation of the area to build strange buildings not related to the history and nobility of the city have lead to depletion of these parameters and the neglegance of architectural characteristics and heritage of the city.

There are a lot of historical architecture today ruins or built in place of building a strange style beyond the format of architectural fabric and urban of the city, and there are too many examples of what is happening from the futility of this architectural heritage and the best example of this the mosque of Aban shown in Crater, a mosque with a long history lost its identity and distinctiveness of historical architecture; it became a recurrent pattern of mosques in different parts of the city

Through this paper, we highlight many architectural buildings that need attention and preservation from the competent authorities. As they say that the standards and criteria of the true civilizations is the Architecture and Urbanism.

At the conclusion of our research, we recommend a number of results emphasize the need to focus on the unlimited buildings of the historical and architectural monuments of the city of Aden and the rehabilitation and preservation of its architectural identity and style.

**Key words:** Originality Architectural Monuments , Architectural Heritage , Architectural Identity.

## PHYSICS

### Studying the photoelectric properties of $\text{In}_2\text{O}_3:\text{(ITO)}$ thin films made by Sol-Gel technique and its applications

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#### Abstract

Indium tin oxide  $\text{In}_2\text{O}_3:\text{In}$  (ITO) tin oxide thin films have been prepared, using SOL-GEL technique with dip coating method for high efficient solar cells windows. The doping ratio effect on the photoelectrical properties was studied by optical transmittance and electrical resistance of the films.

A working point of the (ITO) films was studied, using figure of merit  $\phi_{TC}$  according to the highest optical transmittance with the lowest of electrical resistance. The study shows that the optimal working point of ITO films is (Sn/In=9%) by weight, agreement with the best performance of the photoelectrical thin films prepared, then the optical efficiency of the films stars to decline sharply with increasing the doping ratio.

**Key words:** Photoelectric characteristics, Indium tin oxide (ITO), SOL-GEL Technique, Dip Coating Process.