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## ENGLISH TITLES

### BIOLOGY

#### **Helminthes nematodes of two reptiles *Chalcides ocellatus* and *Uromastyx ornata philbyi* from two areas in Yemen**

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#### **Abstract**

In the present study, the helminth fauna of the digestive tract of the lizard *Uromastyx ornata philbyi* and *Chalcides ocellatus* were investigated. Fifty Animal samples were collected, from two areas in the Republic of Yemen (Aden and shabowah ) and dissecting for parasitic examination. Identification of nematodes based on morphological characters. seasonal differences in abundance of infection were recorded. The nematodes detected belong to family pharyngodoida and Rhabdiasidae. The rate of nematode infection in *Chalcides ocellatus* and *Uromastyx ornata philbyi* was 84% and 92% respectively. The hind-gut of the hosts was the most infected place of the digestive tract. The reptiles with highest length and biggest weight were more infected. Females *C. ocellatus* were more infected (96.9% ) than males (78.6% ) , while males *U. ornata philbyi* were more infected(100% ) than females (86.7%). Result showed that the season was the main factor affecting parasite abundance. The highest mean abundance of nematode infection was recorded during summer in both reptiles .It is concluded that reptiles in the study area are highly infected with nematodes, and the abundance of the parasites correlates with size , length and weight of the host.

**Key words:** Reptiles, nematode , pharyngodoidae, Rhabdiasidae, abundance.

## **Bioaccumulation of cadmium metal in rabbits liver tissues**

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### Abstract

Cadmium is a natural metal similar to zinc in many characteristics, which is rapidly soluble in mineral acids. It is used in plastic and the pigments.

The most prominent sources of environmental pollution by this metal are the industrial processes and the use of some fertilizers, especially super phosphate fertilizer and untreated sewage.

The first thing that must be clarified, here, that cadmium is not essential for life. It is highly toxic and harmful to all living organisms.

In this study, the liver of rabbits effective organ that accumulates cadmium in different concentrations. The higher dose of cadmium chloride ( 200 mg/kg/day ) that was gavaged into the rabbits showed (51.53±1.36 µg/g dry wt). The medium dose ( 40 mg/kg/day ) showed concentrations of 7.8±0.19 µg/g dry wt. In the liver, the low dose (8 mg/kg/day) was concentrated (1.26±0.24 µg/g dry wt).

The control group showed nearly fractions of concentrations, may be the presence of cadmium in fertilizers source of metal in plant food and, subsequently, into the animal tissues, or may be from the use of untreated wastewater to irrigate crops.

The rabbits showed different forms of symptoms such as fall of some hair, hysteric movement and difficulty in breathing, vomiting, diarrhea then constipation and it also showed loss of weight according to the concentrations of the dose given. The group that gavaged with highest dose died by the end of the fourth week.

**Key words:** Cadmium, toxicity, rabbits, behavior symptoms.

## CHEMISTRY

### **Study on thorium(IV) sorption from aqueous and aqueous–organic media by cation– exchange resin Lewatite CP 3050: Kinetic study and resin sorption efficiency**

**Kh. A. S. Ghaleb, Niyazi A. S. Al–Arequi, Ali Mutair, Elyas Sadeq Alaghbari and Ahlam Al–Alas**

Department of Chemistry, Faculty of Applied Science, Taiz University, Taiz– Yemen

#### **Abstract**

The feasibility of using Lewatite CP 3050 as a cation– exchange resin for the sorption of Th(IV) from aqueous and aqueous– organic media was examined by a modified limited batch technique. The objective of this work is to investigate the influence of acetic acid concentration,  $\gamma$ – irradiation of the cation– exchange resin, and non–ionic surfactant addition on the kinetics of Th(IV) sorption. Many experiments were performed at different temperatures in aqueous media, aqueous– acetic acid media with varying acetic acid concentrations, and mixtures of acetic acid with aqueous non–ionic surfactant, ethoxylated nonyl phenol (ENP), with different percents (1, 3 and 5%). Samples of Lewatite CP 3050 were previously subjected to  $\gamma$ – radiation at various doses (20, 40, 60, 80 and 100 Gy) to study the  $\gamma$ – irradiation stability of the organic exchanger and its effect on the thorium sorption. The sorption of Th(IV) initially increased with increasing acidity of the medium up to 0.10 M, and thereafter decreased remarkably with acetic acid concentrations up to 2.0 M. In addition, a gradual decrease in Th(IV) sorption as a function of percent surfactant added was clearly observed. Interestingly, the Th(IV) sorption decreased appreciably with the decreasing order of gamma doses at which the cation– exchange resin was irradiated. For all the systems studied herein, the slowest step governing the sorption rate was found to be the diffusion within the resin particles subjected to the cation– exchanging. Various kinetic and activation parameters including effective diffusion coefficients ( $D_i$ ), apparent activation energy ( $E_a$ ), and entropies of activation ( $\Delta S^*$ ) correlated well with diffusion and sorption process.

**Key words:** Th(IV) sorption, Cation– exchange resin,  $\gamma$ – irradiation, Non–ionic surfactants.

## **ENGINEERING**

### **Electrical energy from the wind in Yemen**

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#### **Abstract**

Today, the world is looking for alternative methods for the production of clean energy that will get rid of depending on costly oil and gas. The high cost of oil and gas has weakened the economies of several countries. Since wind-turbine farms are capable of generating large amounts of clean electrical energy, wind turbine technology has given much attention. Currently, Wind-turbines, with various output capacities, are available to meet residential, commercial and industrial requirements.

Yemen is characterized with many promising areas having quite suitable wind speeds for electrical power generation. Thus, Yemen is a suitable place for generating energy from wind. This paper aims at exploring the possibility of utilizing wind energy in Yemen

**Key words:** Wind energy, Induction generators, wind turbines.

### **Face recognition using neural networks models with discrete Wavelet and Logarithmic Transforms**

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#### **Abstract**

Face recognition has been identified as one of the most fascinating research areas and, as a result, it has drawn the attention of many researchers due to its varying applications, such as identity authentication, security access control, human computer interaction and surveillance. This paper presents two transform methods: Discrete Wavelet Transform (DWT) and Logarithmic Transform. The paper also presents the different models of neural network such as Back Propagation, Self-Organizing Map (SOM) and Radial Basis Function (RBF) neural network. The proposed models are trained and tested on ORL and Yale face databases. These models are successfully applied for face recognition, and the experimental results on ORL database gave good results.

The DWT method with Self-Organizing Map model gave the best recognition rate (93.3%) and took less time on ORL database, so this method is very helpful in recognizing faces with large data base sets, while the DWT with Radial Basis Function neural network model gave the best recognition rate of about 85.3% than the other methods on YALE database.

**Key words:** Face recognition, Discrete Wavelet Transform, neural network, Back-propagation, Self-Organizing Maps, Radial Basis Function, Logarithmic Transform.

### **Image recognition using recurrent auto-associative memory neural network and fuzzy image enhancement**

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#### **Abstract**

This paper presents Image Recognition with the help of an Artificial Neural Network and fuzzy logic model that exploits two techniques Recurrent Auto-associative memory Neural Network (RAMNN) and Fuzzy Image Enhancement (FIE). The proposed RAMNN and FIE model uses Recurrent Auto-associative memory to determine whether an input vector is "known" (i.e., stored in the net) or "unknown." The RAMNN recognizes a "known" vector by producing a pattern of activation on the output units of the net that is the same as one of the vectors stored in it, so that noisy input can also be recognized. After that, the image is provided to the Fuzzy logic system model to remove impulsive noise, to smooth non impulsive noise, and to enhance the edges or other salient structures in the input image. The RAMNN and FIE model has been prepared in MATLAB platform. The paper evaluates the effectiveness of the model, testing their suitability for natural as well as Satellite images.

**Key words:** Image Recognition, Artificial Neural Network, fuzzy logic, Recurrent Auto-associative memory Neural Network.

### **Analysis and simulation study of cellular communication systems**

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#### **Abstract**

The scarcity of radio channels is the main bottleneck towards maintaining the quality of service (QoS) in a mobile cellular network. As channel allocation schemes have become more complex and computationally demanding, alternative computational models that include knowledge-based algorithms and that provide the means for faster processing are becoming the topic of research interest. In this paper, the performance of mobile users, in terms of call blocking and handoff failures have been studied and the channel assignment problem in a cognitive radio based wireless network has been addressed. The particle swarm optimization (PSO) algorithm is employed to efficiently manage frequency reuse through

neighbors' allocation to reduce co-channel and adjacent channel interference in the designed network. A comparative study to evaluate the PSO based algorithm and a load balancing with selective borrowing scheme (LBSB) for a cellular network is presented. The behavior and performance of this work are verified by conducting simulation experiments. Comparison of the obtained results justifies the effectiveness of the PSO approach.

**Key words:** Particle swarm optimization, channel assignment, frequency reuse, mobile computing.

## ENVIRONMENT

### Evaluation of susceptibility and resistance of pathogenic bacteria for the screening of some medicinal plant extracts

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#### Abstract

In the present study, ethanol and methanol medicinal plant extracts of *Acacia nilotica*, *Ocimum basilicum*, *Eucalyptus camaldulensis* and *Salvadora persica* leaves; *Acalypha fruticosa* stem, *Eucalyptus camaldulensis* bark and *Azadirachta indica* bark and fruit, *Allium cepa* and *Allium sativum* bulbs were tested *in vitro* for their potential activity against seven standard bacterial strains of which three of them are Gram-negative, namely *Proteus mirabilis*, *Klebsiella pneumoniae* and *Salmonella typhimurium*, and four are Gram-positive such as *Bacillus subtilis*, *Bacillus cereus*, *Staphylococcus albus* and *Micrococcus roseus*. The antibacterial activity was scored by measuring the diameter of growth inhibition zone as employing agar well diffusion assay method and using nutrient agar (NA). It was revealed that the ethanol and methanol extracts exhibited varying inhibitory activities against the selected pathogenic bacteria. The diameters of growth inhibition zone ranged from 7 to 25 mm. The maximum diameter of zone of growth inhibition was exhibited by methanol extract of *A. indica* bark, followed by ethanol extracts of *O. basilicum*, *E. camaldulensis* leaf, *A. indica* bark and fruit and *A. fruticosa* bark against *B. subtilis*, *M. roseus*, *S. typhimurium* and *B. cereus* respectively. The tested bacterial strains *S. albus*, *K. pneumoniae* and *P. mirabilis* were more resistant to methanol and ethanol extracts of *A. cepa*, *A. sativum* and *S. persica* respectively. It seems that the susceptibility and resistance of bacteria to the test of plant extracts varied according to the method of plant collection, preparation of plant extract and the preservation duration period of plant extract.

**Key words:** Medicinal plants, antimicrobial activity, pathogen, diameter of zone inhibition.

**Correction in *Phragmanthera* Tiegh. (Loranthaceae) in the flora of Al-Hujariyah - Taiz Governorate, Yemen.**

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**Abstract**

In 1997, Wood identified *Phragmanthera austroarabica* Miller & Nyberg collected from Al-Hujariyah, Taiz Governorate, Yemen as *P. regularis* (Steud. ex Sprague) M.G. Gilbert which is combinations for the basionym *Loranthus regularis* Steud. ex Sprague. In this work, the identity of *Phragmanthera regularis* (Steud. ex Sprague) M.G. Gilbert, found in the flora of Al-Hujariyah, is *Phragmanthera austroarabica* Miller & Nyberg which is elucidated by providing photos and morphological description. Specimens collected from the same locality were compared with the description of *Loranthus regularis* Steud. ex Sprague (basionym of *P. regularis* (Steud. ex Sprague) M.G. Gilbert) in Flora of Tropical Africa. It was clarified that a misidentification was made by Wood in 1997. Thus the correct name for *Phragmanthera* species found in the flora of Al-Hujariyah, as described, is *Phragmanthera austroarabica* Miller & Nyberg not *P. regularis* (Steud. ex Sprague) M.G. Gilbert. as cited by Wood in 1997.

**Key words:** *Phragmanthera austroarabica*, *P. regularis*, *Loranthus regularis*, Al- Hujariyah, Taiz Governorate, Yemen.

## MEDICINE

### Recombinant genotype of hepatitis B virus in Aden, Yemen

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#### Abstract

This study was conducted to determine the common genotypes of HBV in chronic hepatitis B patients, in Aden Governorate, Republic of Yemen, as baseline information for future researches.

Twenty HBsAg positive chronic hepatitis B (CHB) patients were examined in Aden and their samples were tested in the Medical Research Institute (MRI) of Alexandria University in Egypt.

Serological profiling showed that 75% of the patients were having Anti-HBe antibodies and 25% were having HBe antigen. Genotyping of the patients showed a prevalence of CD recombinants followed by D genotype and A genotype. Among the anti-HBe positive patients; CD recombinant, genotype was higher than genotype D (73.3% and 20.0% respectively) and genotype A was diagnosed in one (6.7%) patient.

This study concluded that in Aden, there is a high percentage of CD recombinant genotype among HBsAg positive patients and recommended further studies to investigate the clinical significance of this recombinant is recommended.

**Key words:** HBV , Chronic , HBe antigen, Genotype , Recombinant.

### Patterns of rheumatic fever and rheumatic heart disease in the population of Socotra island- A population based study

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#### Abstract

Rheumatic heart disease is still the commonest valvular heart disease in Yemen. There is no population based study regarding the prevalence of rheumatic fever/ rheumatic heart disease (RF/RHD) from Socotra Island and, therefore, the objective of the study is to find out the prevalence of rheumatic fever/rheumatic heart disease (RF/RHD) among the population in Socotra Island.

This is a community based survey for prevalence of RF/RHD done in four villages of different districts of Socotra. The subjects are suspected to have RF/RHD on clinical ground subjected to echocardiography to confirm the diagnosis.

A total of 3764 subjects representing 10% of the population were included in the survey were screened. 1946 (51.7%) were females and 1818 (48.3%) were males. Twenty two of these were found to have RF/RHD (5.8/1000). The mean age of these patients was  $30.35 \pm 14.17$  years, twenty of these were females and two were males. Mitral valve was the commonest to be involved, fourteen were known to have RF/RHD and ten were on penicillin prophylaxis.

It is concluded that RF/RHD is still common in the population of Socotra. Mitral valve is the commonest to be involved and the prevalence is much more in females than in males.

**Key words:** Rheumatic fever, Rheumatic heart disease, Socotra Island

### **Awareness about obstetric danger signs among pregnant women in Al-Mukalla district, Hadhramout, Yemen**

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#### **Abstract**

The objective of the study is to assess women's awareness of danger signs of obstetric complications and to identify associated factors in Mukalla City, Yemen.

A descriptive cross-sectional study was conducted from January 10– June 27, 2013, a samples of 400 pregnant women attending antenatal care services. Interviews were conducted in randomly selected six primary health care centers and structured pre-tested questionnaire was used. The mean of age of participants was  $29 \pm 7.5$  years.

Most of the pregnant women 284 (71%) were not aware of danger signs of during pregnancy, childbirth and postpartum period. Common recognized danger signs during pregnancy and delivery were vaginal bleeding mentioned by 109 (29.7%) and 87 (21.8%) respectively, while most common recognized signs of postpartum period was high fever by 53 (13.3%). Common source of information about danger signs was personal experiences. The awareness of danger signs were insignificantly associated by education, age and antenatal visits.

We concluded that women awareness of danger signs of obstetric complications was very low. It has become necessary to provide information, education and communication to pregnant mothers so as to increase their awareness and, thus, to enable early recognition of serious health problems during pregnancy, labor and postpartum period.

**Key words:** Awareness, women, obstetric danger signs, Al-Mukalla, Yemen.

## PHYSICS

### **Nonlinear propagation of the dust ion acoustic waves in a weakly relativistic adiabatic magnetized dusty plasma**

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#### **Abstract**

The propagation of nonlinear dust ion acoustic (DIA) waves has been studied in collisionless, weakly relativistic, magnetized adiabatic dusty plasmas containing weakly relativistic adiabatic inertial ions fluid, adiabatic inertialless electrons fluid, and negatively charged stationary dust grains. A nonlinear Zakharov-Kuznetsov (ZK) equation has been derived by using reductive perturbation method. Stationary solution of this equation is obtained. A method based on energy consideration is used to obtain the condition of stable DIA waves. The effects of relativistic factor  $\beta$ , the concentration of adiabatic/isothermal electrons  $\alpha$ , the ratio of the ion temperature  $\sigma$  and obliqueness (i.e., the propagation angle) on the basic characteristics of DIA waves are investigated. It is found that these parameters have significantly modified the basic properties of the DIA waves.

**Key words:** Dust ion acoustic waves, weakly relativistic, Adiabatic dusty plasma.

**Identification of residual nuclei produced in  $^{16}\text{O} + ^{156}\text{Gd}$  reaction using X – ray detection technique**

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Physics Department, Faculty of Education – Zingbar , Aden University

**Abstract**

Samples were (The target of enriched  $^{156}\text{Gd}$  which were arranged in such a way that the target materials were facing the beam of  $^{16}\text{O}$  at 100MeV so that the recoiling residual nuclei may be trapped in the aluminum backing. The stack of the target was irradiated for about 8 hours at 98.2, 88.7, 78.9 and 68.5MeV energy, keeping in view the half – lives of the residues of interest, as shown in Fig (2).The residual nuclei may be identified by their characteristic X – ray after the irradiation of the target stack is over. Analysis of the X – ray spectra had been done using FREEDOM and ORIGIN software's. As a typical example, the composite X – ray spectra of Lu, Yb, Tm, Er was obtained in the  $^{16}\text{O} + ^{156}\text{Gd}$  reaction at 78.9 MeV recorded at increasing times, after the stopping of irradiations, as shown in Figs (3– 10). Residues were identified on the basis of half–lives obtained from the analysis of the decay curves of composite activity, as shown in Figs (11– 14).

**Key words:** Heavy ions, X – ray detection technique: X – ray spectra, X – ray energy, half – life, radio-isotopes.

**Effect of thickness on optical properties of ZnO thin films**

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**Abstract**

Thin films of ZnO, with different thickness on glass substrate, have been prepared by thermal evaporation system. The thicknesses of the films were found to be 120, 165 and 210 nm. The optical properties were studied as a variation of film thickness in ultraviolet (UV), visible and near infrared (nIR) regions. The experimental data of transmittance and absorbance were used to determine the reflectivity (R), optical constants ( $\alpha, k, n, \epsilon_r, \epsilon_i$ ), optical energy gap ( $E_{opt}$ ), and Urbach energy( $E_u$ ). The results show high transparency of the films(60 ,68.4 and 80% transmittance) for the thicknesses 210 ,165 and 120 nm respectively , in the visible range with a sharp absorption edge around 377nm wavelength of light. The optical energy gap for the films of different thicknesses was calculated as 3.2, 3.32 and 3.45 eV for the thicknesses 120, 165 and 210 nm respectively. These results are due to the shift of

the absorption edge towards short wavelength in nUV region from 388 to 360 nm. The optical constants were found to be dependent on the spectral behaviour overall the range of spectra, and on the film thickness which causes systematic increasing in the refractive index (n), 2.22, 2.9 and 3.42 for thicknesses 120, 165 and 210 nm respectively, in the visible region (450-750 nm).

**Key words:** Zinc oxide (ZnO), thin film, optical properties, optical constant.

## ARABIC TITLES

### CHEMISTRY

#### **The effect of lead and cadmium in the growth of green algae *Scenedesmus acutus* isolated from the basin of Al-Abrash dike –Tartous- Syria**

**George Deeb**

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#### **Abstract**

The aim of the study is to illustrate the impact of two of the elements (lead and cadmium) in the growth of green algae *Scenedesmus acutus* based on the values of absorbance, estimating the biomass of the algae, of which each element was calculated regarding growth rates, the doubling time and the effective mean concentration, as rates of inhibition of the growth of the algae, was calculated after 24 hours, then every 24 hours during 6 consecutive days and used as primary indicator of the impact of toxic to the studied elements. It also estimated the toxicity of the lowest and highest concentration of lead and cadmium in the growth of the algae during different time periods.

The results showed that the exposure algae to 30 mg/l concentration of lead element led to a negative impact on the growth, while the impact of the least concentrations was evident in the decline in growth. The element cadmium has led to a decline in growth, especially when using 1 mg/l, and the results showed that the toxic effect of cadmium in the growth of the algae was higher than that in lead, based on the effective mean concentration after treatment of this algae for six consecutive days.

The results were analyzed statistically, using the test (L.S.D 5%) and the comparison between the averages.

**Key words:** alga *Scenedesmu sacutus*, growth, heavy elements, lead, Cadmium, pollution, avital indicator.

## ENGINEERING

### **An assessment study of the (UNRWA) housing projects in Gaza Strip: analytical study to assess Bader housing project in Tel Sultan - Rafah (case study)**

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#### **Abstract**

A result of the 1948 war between Israel and the Arab countries has been the displacement of about one million Palestinians inside Palestine (West Bank and Gaza Strip) and in the Diaspora, where the neighboring Arab countries. The Gaza Strip alone has accommodated nearly a quarter of a million immigrants. As a result of the natural increase of the number of refugees, in addition to the practices of the Israeli occupation, especially after the first and second intifada, which led to the demolition of tens of thousands of housing, the housing problem has exacerbated. For those reasons the UNRWA has initiated several housing projects in the Strip. The study aims to assess the housing projects implemented by UNRWA in Gaza Strip so that the identification of the most important findings and recommendations can be used to improve the future status of the housing sector and to serve the next phase of construction. To achieve the goal of the study, the researcher adopts a scientific methodology based on the description and analysis of the UNRWA housing projects. This methodology included four main sections. First, the situation of Palestinian refugees and the role of the (UNRWA) in Gaza has been clarified. The second section has dealt with the study of the most important housing projects implemented by the UNRWA in Gaza, which were represented in (Khan Younis housing, Al-Fochari housing, Bader housing in Tel Sultan, Saudi Arabia housing project). The third section has focused on the analytical study to assess the housing project "Bader" in Tel Sultan - Rafah as a case study. This case study included three main points, namely (assessment of planning systems and architectural character of the project and evaluation of the results of the questionnaire distributed to observe the view of residents of the area. The fourth section has dealt with the main findings and recommendations related to the objective of the study.

**Key words:** UNRWA, Palestinian Refugees, Camps , Housing Projects , Evaluation , Urban Configurations , Architectural Character.

## ENVIRONMENT

### Medicinal plants uses of Al-Hanashi village –Yafae-Abyan

#### Governorate – Yemen

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#### Abstract

Alhanashi village is situated in the southern east of Rosad District and located between E 13, 70 & N 45,34 . It's located on the 1486m in the low places and may be reached to 1500m in the high places, while the higher mountain reaches to 2600m above the sea level. The survey study was conducted during the period November 2012 to April 2013. The ethnomedicinal data on 76 plant species, belonging to 63genera of 37 families, were recorded during field trips from the investigated area. The uses of plant varied between external use and internal use to heal diseases and the method of use was specified by the type of disease and plant use.

**Key words:** Plant parts, purpose of treatments, external uses.

**Medicinal plants in the flora of Wadi Al-dhabab, Hayfan District – Taiz  
Governorate- Yemen**

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**Abstract**

Human being, in his environment, saw plants that grow and flourish then disappear, and afterwards start to grow again. He was satisfied with what he eats from fruits, tuberous, roots, and seeds, stems, leave as well as what was available of such plants. By the passed of days and repetition of seeing and eating those plants repeat the shows of plants and eating them, he was able to distinguish between the beneficiary plants and harmful plants, avoiding the harmful and toxic plants depending on the form , color and, perhaps smell and taste. Among the useful plants he distinguished between plants that can be used as food, medicine and other uses.

A human being, in the study area, was capable to exploit the environment and to use plants to cure many diseases and pain relief. Through this study, it was become clear that from the flora of Wadi Al-Dhabab about 50 plant species belonging to 44 genera and 30 families are being used to treat many diseases that affect the people of Wadi Al-Dhabab. The Uses of plants varied between external and internal to heal diseases and the method of usage could be specified by the type of disease and the used plant. Concerning the plant parts used, leaves have occupied the first position represented by 31 species , followed by fruits and sap by 13 and 11 species respectively.

**Key words:** Plant ecology, medicinal plants, useful plants, ethnobotanical.

**Medicinal plants in a costal Hadramout and popular their usages**

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**Abstract**

This study was carried during different seasons between, December 2012 and July 2013, in the coastal Hadramout, to make significant knowledge about the relationship between human and its environment in this area and how to benefit from such knowledge.

It's obviously noticed that the link between wild plants, with their different parts, and the medical purposes is obviously noticed. This study has proved that the plant parts has multiple uses. It has conveyed 42 wild plant species that are used for medical purposes. The plant leaves have more uses than any other parts (28.6%). The shoot percentage represents 26.2%. fruits, roots and gum 11.9% each, succulents 'part 9.5%, bark 7.1%, seeds 4.8% , and the lowest percentage represents 2.4% for the succulents part.

The sicknesses that are be treated by the plant parts are verified the inner sicknesses such as worms, diabetic etc, in addition to the outer sicknesses such as vitilago and burns etc.

According to the analysis of the use way, the present study has proved that there are too ways for the use of medical plants: pour usage without additional substances and (b) pour usage with additional substances.

**Key words:** Plant parts, environment, species, treatment purpose, medicinal plants.

## MEDICINE

### **The study of volume changes occurring in mandibular condyle and articular fossa in the axial plane according to the skeletal class of malocclusion using computed tomography**

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#### **Abstract**

This study aims at comparing volume changes occurring in mandibular condyle and articular fossa in axial plane in skeletal class I, II and III malocclusion patients. The sample consisted of 36 patients divided into three groups (12 patients of CI as control group, 12 patients CII and 12 patients CIII). CT images were taken for all patients and volume measurements of mandibular condyle and articular fossa were studied on the radiographic images using a computer program. The measurements were compared for the different groups of malocclusion. Some of the study results were that both the maximum diameters of the mandibular condyle on the left side were significantly less than the right side in CII group. The study also showed that the maximum anterior-posterior diameter of the mandibular condyle on the right side was greater in males than females in CI, CIII groups of malocclusion and the differences were statistically significant ( $p < 0.05$ ). So, by the results of this study, the conclusion is that type of malocclusion has an important effect on the temporomandibular joint morphology.

**Key words:** Computed tomography, anterior joint space, depth of articular fossa.

**Effect of two different curing methods on the amount of released monomer from acrylic resins**

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**Abstract**

The majority of base dentures are made of polymethyl methacrylate which are the most commonly used materials in prosthodontic dentistry but there have been reports of allergic reactions to prostheses constructed from these materials. These reactions have been described as both allergic and local chemical irritation. Descriptions of oral reactions to acrylic resin often include symptoms such as burning mouth and tongue, redness, and erosion of oral mucosa. These symptoms can be related to several causative factors and the first factor, according to many studies, is released monomer. Therefore, we do this study to evaluate and compare between the percentage of released monomer from each (conventional and fluid) acrylic resin. Two acrylic resins were used in our study; the conventional acrylic resin and the fluid acrylic resin. Twenty rectangular acrylic resin specimens (60×10×2.5) mm<sup>3</sup> were prepared divided into two groups (10 specimens from each group). After that, 5 ml methyl ethyl ketone was added in test tubes and was kept in 4°C for 4 days, then 10 micro liters from para xylene was added to every test tube and were centrifuged. Finally, the supernatant extract was removed by pipette for analysis by gas chromatography. The statistical analysis showed that the percentage of released monomer (0.97 conventional acrylic resin increased to 5.09% for fluid acrylic resin) was so high than that for conventional acrylic resin.(p<0.05).

We conclude, within the limitation of this study, that the conventional acrylic resin is so better than the fluid acrylic resin for monomer release.

**Key words:** conventional acrylic resin, fluid acrylic resin, residual monomer.