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ENGLISH TITLES

AGRICULTURAL SCIENCES

The effect of caffeine used in preservative solutions to improve the postharvest life of Chrysanthemum cv. bacardi

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Abstract

In this experiment, five different preservative solutions were investigated. As control solution distilled water was used. The experimental solutions were Spring 5 gL-1, and caffeine 5, 10, 20, 40 mgL-1. The average flower diameter become larger with 1 cm during the experiment, but no significant difference was found. After one week, the leaves began to turn yellow and the ornamental value of flowers was reduced. In the solution which contained 40 mgL-1 caffeine, the leaves become withered, which was not seen in the other treatments. Photosynthetic activity declined from the starting value of 3.9 µmolm-2sec-1 in all treatments. Stomata closed gradually and the transpirational rate decreased. Photochemical efficiency of PSII was highest in distilled water and in 20 mgL-1 caffeine solution(□PSII – 0.53 and 0.46 respectively). It was concluded that the methods used are appropriate to follow physiological processes of withering in plants. In the case of the 'Bacardi' chrysanthemum, flowers remained fresh for a longest time in the caffeine solution contained 20 mgL-1 and in distilled water.

Key words: chrysanthemum, caffeine, vase-life, photosynthesis, transpiration

CHEMISTRY

Synthesis, spectroscopic and crystal structure studies of N,N'-Bis(2-hydroxy-3-methoxybenzylidene) diaminobenzene derivatives

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Abstract

The reaction of o-vanillin 1 with phenylenediamine isomers 2–4 in dichloromethane formed three diaminobenzene derivatives: N,N'-bis(2-hydroxy-3-methoxybenzylidene)-1,2-diaminobenzene 5, N,N'-bis(2-hydroxy-3-methoxybenzylid-ene)-1,3-diaminobenzene 6 and N,N'-bis(2-hydroxy-3-methoxybenzylidene)-1,4-di-aminobenzene 7, respectively. All compounds were obtained as single crystals and the structures were determined by X–ray crystallography. All compounds were confirmed by FTIR, HRMS, 1D and 2D NMR spectroscopy. The complete assignments of these compounds, using 1D and 2D NMR including APT, DEPT–135, COSY, HMQC and HMBC in CDCl3 , will be discussed.

Keywords: 1D NMR; 2D NMR; X–ray Crystallography; Bis-Schiff bases; Diaminobenzenes.

ENGINEERING

Metallurgical analysis for producing cast iron and steel

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Abstract

During production and just before pouring , the producer of cast iron and steel has to take specimen to find out how far the product compositions satisfys the costomer's requirements. Accordingly, some additions to the charge become necessary for adjustment. This process may be repeated till the quality satisfys the customer's requirements. Depending on the charge components used, the adjustment process may be too long, increasing the production time and cost.
The present paper deals with metallurgical analysis of producing cast iron and steel with the aim of finding way to predetermine the optimum type and amount of charge components that satisfy the specific quality of cast iron and steel. In this paper, the metallurgical operations that takes place in the foundry furnaces and the common metallurgical processes have been analysed and illustrated in a logical sequence. The results of the analysis are given in schematic chart diagrams, which show the metallurgical inter-relationship between the input and output substances, and the influence of the operation time on the carbon and impurity content, and thus on the quality of cast iron and steel. A flow chart is worked out and illustrated that gives the possibility of the predetermination of optimum charge, saving production time and cost.

Key words : Production ; Metallurgy ; Extraction ; Cast iron ; Steel.

MATHEMATICS

On the Odd graphs and their binding numbers

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Abstract

The odd graph O_K is a graph whose vertices are the k - element subsets of the set $\{1,2,\cdots,2k+1\}$ ($k \geq 2$), with two vertices being adjacent if, and only if, they are disjoint. The binding number $b(G)$ of a graph G is defined as

$$b(G) = \min_{X \in F} \frac{|N(X)|}{|X|},$$ **where**

$$F = \{X : \Phi \neq X \subseteq V(G), N(X) \neq V(G)\}.$$

For a graph G, it is known to be a hard problem to determine the binding number $b(G)$ of the graph G, in general. Since 1973 up to now, many authors studied the binding number of almost all known graphs. The binding number of the odd graphs is still an open problem. This paper determines the binding number of the odd graphs. Moreover, we show that the binding number of the odd graphs and their complement attained the upper bound of the binding number of graphs.

Keywords: Graphs; odd graphs; binding number of graphs.

On characterizations of M – preopen and M-preclosed mappings

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Abstract

Different kinds of mappings between topological spaces have been defined. Their properties and characterizations have been also investigated. This paper is devoted to continue exploring further properties and characterizations of M-preopen and M-preclosed mappings .

Key words: Preopen, precontinuous, M-preopen, M- preclosed.

MEDICINE

Asymptomatic heart failure in patients with history of coronary artery disease

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Abstract

The early detection of asymptomatic heart failure (HF) is an important approach in modern HF prevention strategies, such as the ACC/AHA (American

College of Cardiology/ American Heart Association) staging classification of HF. The aim of this prospective clinical study is to show the efficacy of application of the ACC/AHA staging classification of HF to asymptomatic patients with history of CAD. For this purpose, one hundred patients were followed up in a specialized private clinic in Aden for 3 years, from December 2005 to December 2008.The follow up results showed a low rate of HF manifestation & improvement of echocardiographic findings in patients who were followed up by the ACC/AHA guidelines, compared with the controlled patients, who were remained without preventive therapy.

Key words: HF staging classification, CAD, ACC/AHA guidelines.

Renal cell carcinoma: clinico-pathological retrospective study on Yemeni patients

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Abstract

The aim of this study is to highlight the pattern of renal cell carcinoma among Yemeni patients and to correlate this type of cancer with some epidemiological risk factors.

The clinical records of 22 patients with renal cell carcinoma, admitted to Al–Gamhoria Teaching Hospital in Aden and Ibn-Khaldoon General Hospital in Lahj Governorate between 1999 – 2002, were studied retrospectively. The mean age of the male patients was 55 years, and the females was 45 years. Renal cell carcinoma was more common in males than females, with a ratio of 2:1.

Smoking habits was found in association with the disease in 73.3% of the male patients. Patients with blood group A were with higher rate (54.6%) of RCC than patients with other blood groups. Renal cell carcinoma affected the left kidney more than the right kidney. One third of the patients presented classical triad (hematuria, pain, mass). Anemia and increased ESR were found in 77% and 91% of the cases respectively. Renal failure was present in 9% of the cases. Clear cell type was the most common pathological variant of RCC with 77%.

We concluded that further studies of RCC in larger series are needed to elucidate the frequency, types, risk factors, and the relationship between blood group and renal cell cancers.

Key words: Patterns, renal cell carcinoma, risk factors, Yemeni patients.

Effect of physical activity on glycemic control in type 2 diabetic patients

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Abstract

The present study was conducted to determine the effect of a program of physical activity on glycosylated hemoglobin(HbA1c) and fasting blood glucose (FBG) levels in type-2 diabetic patients. The study group consisted of twenty-five type-2 diabetic men , aging 37-59 years , who were inactive and on an oral hypoglycemic drug. The mean level of baseline-FBG (before the onset of exercise-program) was

192.36 mg/dL and that, following the exercise-program (post-exercise), was 177.92 mg/dL. The mean level of the baseline-HbA1c was 8.41% and the mean post-exercise- HbA1c was 7.94%. The differences between the mean baseline and the mean post-exercise values for both FBG and HbA1c were statistically significant ($p<0.001$).

Key words : physical activity , type 2 diabetic patients , glycosylated hemoglobin, fasting blood glucose , glycemic control.

Management of oesophagogastric varices in patients treated of Algamhouria Teaching Hospital

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Abstract

This is a retrospective and descriptive study performed in Alghamhorea Teaching Hospital in Aden-Yemen, using the registry of the Surgical Department, during the period June 2003-June 2009. The main objectives were to analyse sex ,age group, clinical manifestations and types of management of oesophagogastric varices bleeding.

The total number of patients admitted to the Surgical Department of Al-ghamhorea Teaching Hospital, under diagnosis of upper gastrointestinal bleeding, were 126. Of these (126), the number of patients with oesophagogastric varices was 58 (46%) with a mean age of 39.9 years, ranging between 3—70years of whom males were 46(79.31%) with mean age of 39.28 years, ranging between 3 -65 years and the females were 12(20.69%) with mean age of 38.33 years (ranging between 5-70 years). The male to female ratio was 3.83:1.
The age group most affected was 41-60 years old.
Re-organization and establihment of the Gastroenterology Department in Algamhouria Teaching Hospital is highly recommended.

Key words: Portal hypertension, liver cirrhosis, bleeding, splenectomy

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Common carotid artery intima-media thickness : its correlation with atherosclerotic cardiovascular events in patients with type 2 diabetes Mellitus

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Abstract

Vascular complications are a major cause of morbidity and mortality in patients with diabetes mellitus and affect the quality of life of these patients. Atherosclerosis, which is the major underlying risk factor, is accelerated in diabetes. To reduce morbidity and mortality, identification of patients with high risk for development of vascular events is necessary. Apart from other risk prediction models, detection of sub clinical atherosclerosis at common carotid site by B-mode ultrasonography is a reliable method, can add to the benefit of and improve risk prediction. Population based studies have revealed that increased common carotid media thickness (CCIMT) is associated with prevalent coronary artery disease and is a surrogate maker of cardiovascular events.

To evaluate whether increased CCIMT is associated with increased risk of cardiovascular events in patients with type 2 diabetes.

A total of 90 patients with type 2 diabetes, who were included in the study, were divided in two groups: group (1) without vascular events, and group (2) with vascular events. Apart from patients demographics, detailed history of events physical examination, through blood analysis for fasting, post prandial blood sugar, serum cholesterol, TG, renal function test, chest X-ray, and ECG were recorded. CCIMT was measured by B-mode ultrasonography, using high frequency (9 MHz) linear probe by standard protocol as described in the literature. Mean of three recordings on each side were used for statistical analysis.

Our results showed that, of the 90 patients studied, 45 diabetes mellitus (DM) patients had atherosclerotic events and significantly higher CCIMT values (mean value of 1.005 + 0.17mm), whereas 45 comparable DM patients, without atherosclerotic events, had lower CCIMT values (0.798 + 0.12mm) ($p<0.0001$). A higher CCIMT value (>0.9mm) had a statistically significant association with high odds ratios for atherosclerotic events like ischemic heart disease, cerebrovascular accident, and peripheral vascular disease.

Type 2 DM patients, with atherosclerotic events, had significantly higher CCIMT values than those without vascular events. Patients with higher values of CCIMT had high odds ratio for vascular events. Assessment of CCIMT should be done to enable prompt and prudent preventive action in type 2 diabetes pدatients well before and atherosclerotic event occurs.

Keywords: Type 2 diabetes, atherosclerotic vascular events, common carotid intima-media thickness, carotid ultrasonography.

Fine needle aspiration biopsy of the thyroid gland: a retrospective study of 184 cases.

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Abstract

The aim of this retrospective study is to analyze the frequency of nodular thyroid and to determine the incidence of benign diseases and thyroid cancer among patients who underwent fine needle aspiration biopsy. The study is based on cytopathology reports of all thyroid FNAB performed at The New Modern Histopathological Laboratory in Al-Mansourah, Aden, from 2006–2007, which are reviewed and data of final pathologic results, such as sex, age, and residential area were obtained. The total cytopathology reports were 184. Females were predominantly affected by thyroid nodules with a female to male ratio of 8.7:1. In general, the mean age was 36.45 ±11.3 years. Males had a higher mean age (43.2 ± 12.5 years) compared to females (35.7 ± 10.8 years). Most of the patients (131), representing (71.2%), were from Ibb Governorate. The benign thyroid diseases, reported in this study, were: nodular colloid goiter 101 cases (54.9%), follicular adenoma 35 cases (19%), diffuse colloid goiter 12 cases (6.5%), Hashimoto's thyroiditis 10 cases (5.4%), toxic diffuse goiter 8 cases (4.4%), multinodular goiter 7 cases (3.8%), Thyroid cyst 7 cases (3.8%). Thyroid malignancy is represented exclusively by papillary carcinoma only; it was found in 4 cases (2.2%). A significant difference was found in the occurrence of thyroid diseases between females and males ($p < 0.05$). In conclusion, these results are in accordance with those of previous studies done in Yemen, and it provides useful information for further studies.

Key words: Thyroid nodules, fine-needle aspiration biopsy, Aden.

Toxicity of the high fluoride in the teeth of school children in Al- Ma'alla District, Aden Governorate

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Abstract

The normal water fluoride concentration is 0.5-1%. A lot of people in Yemen drink water with high concentration of the fluoride, about 0.5-1.5%, which rises dramatically in some cities like Sana`a, Taiz, and Lahej. In our research, we will focus on the effect of overdose of fluoride. Such increase of fluoride concentration may cause many several diseases. This research indicates that children who get too much of fluoride via toothpaste and fluoridated water may suffer from a condition known as fluorosis. The higher concentration found in Fluoridated water and toothpaste is a real danger to human cells, especially for children who have a high ability for absorbing fluoride in their human cells.
We analyzed the concentration of water fluoride in some places in Yemen. We also made examination of 75 students between 7-9years old, in which our target zones were the anterior upper and lower teeth from five different Public Schools in Al-Maala district - Aden (in the year 2007).

Key words: Fluoride, water, Fluorosis, School children, Dental Caries.

PHARMACY

Antimicrobial agent - resistance in Escherichia coli, isolated from patients with diarrhea in Aden

and Abdul-Rahman A. Bin Yahia Saeed M. Ismail***
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**** Pharmachemistry Department, Faculty of Pharmacy, University of Aden, Yemen**

Abstract

The potency of five types of antimicrobial agents, tested against four Escherichia coli isolates and causing diarrhea in patients, in Aden were evaluated. The production of the β-lactamase was also evaluated by using direct capillary tubes method. Ofloxacin was the most antimicrobial agent with the highest susceptibility rate and the most active compound among the E. coli isolates (100% susceptible), followed by tetracycline (75% susceptible) and

ampicillin (50% susceptible). The resistance rates to cefpodoxime (100% resistance) and amoxi-clavu. (75% resistance) were high among the isolates in this study. The studied E. coli isolates demonstrated high resistance rates to β-lactam drugs, including amoxicillin- β-lactamase inhibitor combination (amoxi-clavu.). The production of β-lactamase among the studied E.coli isolates (25%) and, therefore, did not contribute significantly to the resistance of these isolates. The results presented in this study confirm that bacterial resistance continues to be a great problem in Aden.

Key words: Antimicrobial agents, E.coli, diarrhea, β-lactamase, inhibitory concentrations.

Survey study on the sensitivity and resistance of urine specimen pathogens to the therapeutically used antibiotics in Aden city

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Abstract

Resistance to antibiotics refers to unresponsiveness of microorganism to antimicrobial agent related to tolerance observed in higher organism. In Aden, there is still a lack of studies related to the identification of antibiotics-resistance in spite of the opening market for the spread of mostly all types of antibiotics. To perform this study, fifteen medical laboratories were selected. Most of them implicated the diffusion sensitivity method. Computer data base, using Excel-program, was constructed for the information collected in the period from December 2007 to the end of April 2008.
The total number of antibiotics standards used in these laboratories were 60. The highest number of antibiotics standard is available in Aden-diagnostic centre. Most of the collected specimens are of urine (31%).92% of them were adult and most of them were female (67%). The most frequent pathogens of urinary infection were of gram (-) microorganisms(69%), and the most pathogen was E-coli (48%). The most sensitive antibiotic against E-coli was Cefotaxim, while the most resistant was Ampicillin.

Key words: Antibiotics, Sensitivity standard, Resistance to antibiotic, E.coli .

SHORT COMMUNICATIONS

MEDICINE

Unusual palatal foreign body: Case presentation

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Abstract

A two- year old Yemeni boy was referred to the Oral and Maxillofacial Clinic of the Aden University because his father had noticed a white lesion on the palate three days before; the child was examined by many dentists and a pediatrician prescribing medical treatment without improvement of the lesion. Questions to the father had not provided any interesting data about previous traumatism, ingestion of caustic substance or history of general disease. A rigorous oral and maxillofacial examination showed a white smooth lesion around 1.5 cm on the middle of the hard palate. According to previous experiences, the final diagnosis was a foreign body adhered to mucosa of the hard palate, the internal cover of a cap from drug bottle, which was removed by the use of a dental probe and college tweezers, leaving a concavity in the involved area that was healed without problems after a few days.

Key words: Oral white lesions, palatal foreign body, oral white patch.

Benign giant Retroperitoneal Schwannoma: A case report

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Abstract

Retroperitoneal Schwannoma, or Neurilemmoma, is a rare tumor that originates in the neural sheath from Schwann cells and accounts for only a small percentage of retroperitoneal tumors. Presentation is typically varied and non-specific, ranging from abdominal pain, abdominal mass or an incidental finding, and the diagnosis is quite often difficult, being confirmed by pathological study afterwards. We report a case of benign retroperitoneal Schwannoma which was incidentally noticed by the patient himself as an abdominal mass. Preoperative imaging studies were not helpful for reaching correct diagnosis. Surgical exploration and complete excision of tumor was successful. The histological

diagnosis of the tumor was reported as benign Ancient Schwannoma. Postoperative period was uneventful and the patient was discharged with a partial femoral nerve injury characterized by mild antero-lateral thigh and leg anesthesia, and quadriceps muscle palsy: Medical Research Council Rating Score (MRC) - grade 2 muscle power. At ten weeks, his quadriceps weakness improved to MRC grade 3, and the anesthesia, although still present, is slightly improved.

Keywords: Retroperitoneum, tumors, Schwannoma, neurilemmoma.

Arabic Titles

AGRICULTURAL SCIENCES

Effect of planting dates on stages and some characteristics of growth of four sunflower hybrids (Helianthus annus L.)

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Abstract

This work was designed to study the effect of planting dates on the growth stages and some growth characteristics of four sunflower hybrids (Helianthus annus L.) .

An experiment was conducted at Nasser's Faculty of Agricultural Sciences in Tuban Delta, Lahej Governorate ,Yemen ,during each of the two agricultural seasons 2002/2003 and 2003/2004. Each experiment contained twelve treatments which were the combination of three planting dates (10 September, 10 December and 10 February) and four sunflower hybrids (Aranda, Sunbro, Sunloca and Melody).A split-plots design with three replications was utilized. Plating dates were allotted to the main plots, while hybrids of sunflower were devoted to the sup-plots The experimental unit of the area was of 7.2m2, containing 6 rows (2m long and 60 cm apart).The experimental results revealed the following finding: there were significant effects of planting dates and sunflower hybrids on the growth stages at two growing seasons.

In context, the results indicated that planting dates at either 10 September or 10 February led to significantly decreased number of days from plating to 50% appearing of head-flower, days to 50% flowering , days to 50% physiological maturity and harvest in two seasons.

In contrast, results mentioned that planting dates at 10 September and 10 February gave significant increase in plant height and number of leaves per plant at two growing seasons, while stem diameter was significantly increased in the second seasons only.

With respect to sunflower hybrids the results showed that all sunflower hybrids had significant effect on the number of days to 50% appearing of head-flower (capitulum's), flowering physiological maturity and harvest in two

seasons. Noteworthy, the results showed that Sunbro and Sunloca of sunflower hybrids gave the earlier plant growth stage compared with other hybrids at both growing seasons.

The interaction effect between planting dates and sunflower hybrids was significantly affected in all different stages of plant growth except days to 50% flowering stages in both seasons , while the interaction effect between planting dates and sunflower hybrids could not reach the level of significance with respect to plant, stem diameter and number of leaves per plant. The interaction of the Sunloca and Sunbro sunflower hybrids planted 10 February gave the earlier days from planting to 50% appearing of head-flower, 50% flowering , 50% physiological maturity and harvest in both growing seasons.

Key words: Sunflower hybrids, planting dates, growth characters.

CHEMISTRY

Kinetic study of purified urease enzyme from date-palm seeds

Saeed M. Ismail* and Abdul-Rahman A. Bin Yahia**
*** Physiological Sciences Department, Faculty of Medicine, University of Aden, Yemen**
**** Pharmachemistry Department, Faculty of Pharmacy, University of Aden, Yemen**

Abstract

Date seeds of Alhajere variety (from Wadi Hajer – Hadramout) was studied for urease enzyme content. Results showed the occurrence of the urease enzyme, with specific activity 598 unit /mg protein. Urease extracted from Alhajere date seeds was purified by using ammonium sulphate (40-60%) saturation and dialyzed by using 20 mM potassium phosphate buffer at pH 8. The results of urease characterization showed that the optimum pH of the enzyme activity was 8 and also the same value for the optimum pH of the enzyme stability. The optimum temperature of the enzyme activity was 40◦C and that for urease stability was (40-50)◦C. Kinetic studies showed that Km and Vmax values were 8.4 mmolar and 975 mmole/min respectively, using urea as a substrate.

Key words: Urease, date, palm, ammonium sulphate, purification, dialyzed, potassium phosphate.

ENVIRONMENT

Ethnobotanic study of wild plants in Al-Hawtah District and villages around, Lahj Governorate

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Abstract

The present study was done through structured questionnaires in consultations with the local practitioners with plants. In this study, we identified 62 species used from the District flora, which belong to 55 genera and 26 families.
This study explained that there are numerous native plant species used in different life fields as medicine, cosmopolitans, ornaments, fuel, agriculture, building etc. The aim of this study is to document the traditional knowledge of plants that are used in different life fields by the local people, so as to be in hand for all.

Key words: People used, Ethnobotany, Medicinal plants, Grazing plants .

Ethnobotanic Study for wild natural plants in some villages of Al - shamiteen District (Taiz Governorate)

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Abstract

The study area is located in the southern part of Taiz Governorate . It is a part of the Governorate and is around 87km. It has a very temperance (atmosphere /climate) all the year .Also, it has a very beautiful Geomorphology nature which contains many plant species . The study was done by using structure questionnaires and interviews with people .
The data were recorded by tape recorder After analyzing the study results ,it appeared that the people benefit a lot from the wild plants because they use the majority of the District flora .
There are about 75 plants were identified which belong to 63 genera and 40 family used for different purposes .

Key words: Al–shamiteen, plant family, ethinobtany, geomorphology .

Ostracoda as environmental indicators: A case study from the Gulf of Aden and the Indian Ocean

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Abstract

The Recent marine Ostracoda from the Gulf of Aden and the Indian Ocean were studied by analyzing three sediment samples, two of them were collected from the shallow marine environment in Aden city, and the third sample was collected from the deep marine environment in the Indian Ocean. In this study, 38 species belonging to 29 genera were recorded. The aim of the current paper is to identify the recent marine Ostracoda in this region and to review the application uses of this animal in the environmental and palaeoenvironmental studies. The distribution of Ostracoda assemblages obviously shows the difference in the environmental conditions which are related to water depth. The application of statistical data on Ostracoda, such as speciation and individuality, closed and open valves and smooth or ornamented forms, were made to interpret the environmental conditions such as salinity, substrate and rate of sedimentation. The present study also reveals that there are different environmental conditions in particular coasts in Aden.

Keywords: Ostracoda, Gulf of Aden, Indian Ocean.

Possibility of utilizing from solar collectors in heat processes for Al-ghwaizi Fish Canning Factory -Hadhramout –Yemen

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Abstract

The experimental studies which we carried out in Algwasi Fish Canning Factory in Hadramout Governorate indicates that there is a possibility of solar energy investment for generating thermal energy to satisfy a fraction of energy requirement, necessary to middle and big industrial establishments, by the utilization of solar reflection concentrators instead of generating energy by the use of fossil fuel combustion.

The results confirm the possibility of using a considerable percentage of thermal solar energy, for fish industrial sector, added to the thermal energy already obtained from fossil fuel combustion, since all technical temperature levels

obtained from fossil fuel combustion in most Yemen factories, including the factory under study, operate on the temperature of 50 – 198

We concluded that the average range of the operating temperature of thermal solar reflection concentrators, locally made, operate within the range of 182-216oC. Consequently, there is an excessive reserve of technical thermal energy equal to about 30% more than the factory required need of energy.

What mentioned above confirms the possibility of investing thermal solar energy in fish industry, economization of fossil fuel consumption, lengthening oil storage age and protecting environment pollution in Yemen.

Key words : Solar energy, Yemen, Industry, Fish canning factory.