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ENGLISH TITLES

BIOLOGY

Preliminary study of antibacterial activity of *Anisotes trisulcus*

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Abstract

Anisotes trisulcus belongs to the family *Acanthaceae*. A literature survey revealed that species of *Anisotes trisulcus* contain active constituents that have antimicrobial, antiviral and antifungal activity and are used as traditional medicine in Yemen under the local name (Moddaid). Stem parts of the plant *Anisotes trisulcus* were collected from Al-Hanishi Village, Rosud district, Yafaa, Abyan Province. The aerial parts of *A. trisulcus* were extracted by traditional distillation method and the extract was prepared as antibiotic with different concentration by using distilled water. Water extract was tested against six standard bacterial strains, namely *Escherichia coli*, *Pseudomonas aeruginosa*, *Streptococcus faecalis*, *Bacillus coagulans*, *Salmonella typhi*, and *Staphylococcus aureus*. The zone sizes of growth inhibition of the selected bacteria were measured in mm diameter by using agar well diffusion assay method, with nutrient agar medium. The obtained results revealed that the plant extract showed varying activities against the sensitive bacterial pathogens at the tested concentration, with zones of inhibition ranging from 17 mm to 45 mm. The maximum diameter of zone inhibition was (45 mm) recorded against *B. coagulans* at the concentration of 100%, while the minimum diameter of zone inhibition was observed to be (17 mm) against *S. typhi* at

10%. The water extract of *A. trisulcus* exhibited marked efficacy against the tested pathogenic bacteria, this obtained result requires the use of modern plant extract method using different polar and non-polar organic solvents due to the restricted availability of this plant in a few countries, according to the trace literature available online.

Key words: Bacteria, *Anisotes trisulcus* extract, diameter of zone inhibition.

Detection of parasite cysts and ova in patients with acute appendicitis

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Abstract

Appendicitis has a worldwide prevalence and affects all age groups. This study shows the incidence and detection of cysts and ova of parasites in appendix from patients with acute appendicitis admitted to Ibn-Kohldon Hospital, Lahej, Yemen. The appendix specimens have been microscopically examined then prepared for histological examination.

The ova of three parasitic worms: *Enterobius vermicularis*, *Ascaris lumbricoides*, *Schistosoma mansoni* and cyst/trophozoite of the protozoan *Entamoeba histolytica* have been detected in 38 of the 56 appendix specimens examined. The incidence of *E. histolytica* and *E. vermicularis* is 29% and 11% respectively, signifying their monoparasitism. The polyparasitism, as seen in, *E. vermicularis* and *E. histolytica* (34.21%), *A. lumbricoides* with *E. vermicularis* (15.29%), *Enterobius vermicularis* with *Schistosoma mansoni* (10.53%) also recorded. The low incidence of co-infection of *Schistosoma mansoni* and *E. vermicularis* (10.53%), has been observed.

Key words: Acute appendicitis, Parasitic worms ova, Protozoan cysts.

CHEMISTRY

Kinetics of oxidation of malonic acid by Ce(IV) in aqueous and aqueous micellar media

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Abstract

Kinetics of oxidation of malonic acid by cerium (IV) has been investigated in the presence and in absence of TX-100. The reaction is found to be first order, with respect to both substrate and oxidant, and zero-order with respect to H^+ . The rate of the reaction is found to be independent of the ionic strength of the solution and is increased by increasing the concentration of TX-100, reached a maximum after which started to decrease with the increase of TX-100. A suitable mechanism for the reaction has been suggested, which agrees with the experimental findings.

Key words: Oxidation; Cerium (IV); Malonic acid; Micellar catalysis.

Comparison of acid neutralizing capacity and buffer capacity properties of antacids of various compositions

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Abstract

The study was carried out to compare acid neutralization capacity and buffer capacity of different antacids brands. Samples of 18 varieties of antacids as tablets and suspension were collected from Aden market.

The back titration method was used for estimating acid neutralization capacity and pH-meter titration method was used for measuring buffer capacity. The result indicated that acid neutralization capacity is ranged from 0.028- 5.924 where the lowest values recorded in S3 suspension brand and highest values in S8 suspension brand and buffer capacity result is ranged from 0.0717 to 4.269 also the lowest values recorded in S3 suspension brand and the highest values in T9 tabletbrand.

Key words: Comparison, antacids, acid neutralizing capacity, buffer capacity.

Effect of garlic on Amoxicillin-clavulanic acid-resistant *Escherichia coli*

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Abstract

This study consists of the evaluation of minimum inhibitory (MIC) and bactericidal (MBC) concentrations of Yemeni garlic against four isolates of *Escherichia coli*. The study showed MIC ranging from 4 to 8 mg ml⁻¹. MBC is 128 to 256 mg ml⁻¹ for Yemeni garlic. It is concluded that garlic has antimicrobial properties *in vitro* against *Escherichia coli*.

The potency of five types of antimicrobial agents tested against four *Escherichia coli* isolates, causing diarrhea in patients in Aden, were evaluated. Ofloxacin is the most antimicrobial agent with the highest susceptibility rate and is 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 are high among the isolates in this study. The studied *E. coli* isolates has demonstrated high resistance rates to β -lactam drugs, including amoxicillin- β -lactamase inhibitor combination (amoxi-clavu.). The MIC of the antibiotics for *E.coli* decrease from 8-64, 8-128,1-32,64-256 $\mu\text{g ml}^{-1}$, without the Yemeni garlic, to 0.5 ,0.5 ,0.5 , 32 $\mu\text{g ml}^{-1}$ in the presence of the Yemeni garlic of Ampicillin , Amoxicillin- Clavu , Tetracycline , Cefpodoxime, respectively. These MIC values indicate a synergic effect between the tested antibiotics and the Yemeni garlic on the *E.coli*. But, in the presence of the Yemeni garlic, the MIC of the ofloxacin is increased from 0.5 $\mu\text{g ml}^{-1}$, in the absence of the garlic, to 2 $\mu\text{g ml}^{-1}$ in the presence of the garlic. Among *E.coli* isolate, a dramatic result is obtained. A high resistance to amoxicillin- Clavu (75%) was observed, but, in the presence of garlic, the amoxicillin- Clavu (0.0% resistance, MIC=0.5 $\mu\text{g ml}^{-1}$) has become one of the most active drugs, like tetracycline and ampicillin (0.5 $\mu\text{g ml}^{-1}$). That mean that, in the presence of garlic, amoxicillin- Clavu becomes one of the antibiotics of choice.

Key words: *allium sativum*; antimicrobial activity; garlic; *Escherichia coli*, MIC.

ENVIRONMENT

Treatment of gray water from mosques using alum salt

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Abstract

The experiment was carried out using a completely randomized design in the laboratories of the Chemistry and Biology Departments, Faculty of Education/ Shabwa, University of Aden, in summer 2009, to find out the effect of alum treatment of grey water on a number of specifications of water. Grey water samples were collected from the collection pond of pure water of the Mosque of Kaliph Omar Bin Abdulaziz, adjacent to the Faculty of Education, Ataq city. The experiment included six alum concentrations: 0.0, 0.2, 0.4, 0.6, 0.8, 1.0 g/ l of pure water, in addition to tap water existing as non-polluted water, with three replicates each. Results can be summarized as follows:

1. The pH of grey water was significantly decreased with the increased concentrations of alum.
2. The electrical conductivity of pure water was significantly increased with the increased concentrations of alum.
3. Salinity of pure water was not increased, except with the highest three alum concentrations.
4. A significant increase in the total sediments in treated pure water with the increase of alum concentration.
5. The number of bacterial cells in pure water was significantly decreased with the increased concentrations of alum.

Key words: alum ,water treatment , grey water.

Environmental assessment of metal pollution in surface sediments of Al-Dhabah port oil, Hadramout Seashore / Republic of Yemen

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Abstract

The objective of this research is to evaluate the degree of pollution of surface sediments of Al-Dhabah port at Hadramout Seashore, in Yemen, and subsequently examines their possible sources. Furthermore, the measured pollutants were compared with those of other corresponding areas in the world. Metals, such as Cr, Cu, Ni, Zn, Mn, Cd, Pb and Fe in the sediments, were determined using Flame Atomic Absorption Spectrophotometer. Generally, the highest concentration of metals was recorded at stations (DH-4 to DH-8) in Al-Dhabah Harbour, while the lowest ones were recorded in sediment samples at relatively pristine region in Ras-Sharmah (protected area) located at the extreme eastern part of the study area. Sediment samples that were collected from stations inside the terminal of oil (stations DH-4 to DH-8) at Al-Dhabah had higher concentrations of all metals. The relatively high concentration of metals might be related to a point source of contamination at Al-Dhabah site, the effect which diminishes with the distance from the sources of the petroleum storage facilities.

Key words: Heavy metals; Al-Dhabah harbour; Ras-Sharmah, Hadramout seashore, Yemen.

MATHEMATICS

Transformation formuli of certain double and triple hypergeometric series

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Abstract

In this paper, a transformation formuli of certain double and triple hypergeometric series, $X_{C; D; D'}^{A; B; B'}$ and $F^{(3)}[x, y, z]$, have been obtained by using the technique of integral operators. Some transformation formuli for Kampè de Fèriet function, $F_{C; D; D'}^{A; B; B'}$, and Appell's functions, F_2 , F_4 , and ${}_pF_q$ have been derived as special cases of our main results.

Key words: Hypergeometric transformation formulas, integral operator, double hypergeometric series, triple hypergeometric series.

MEDICINE

Severe anemia in children with severe malaria and its relation to age and parasite density

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Abstract

The aim of this work is to detect the relation of severe anemia in severe malaric patients < 5ys and patients 5-10 ys with parasite density.

This research was done in Alsewedi Pediatric Hospital in Taiz Governorate, from January to September 2008, for 100 severe falciparum malaria admitted cases. The results of this study indicated the strong relation of severe anemia in severe falciparum malaric children to age < 5ys (P value was significant). There is no

relation between the severe anemia in severe falciparum malaric children and the parasite density (P value not significant). But there is strong relation between decreased age and low level of hemoglobin, P value is significant (P<0.05). These findings suggest that the increasing level of parasite density is not related to severe anemia in severe falciparum malaria. Also, the decrease of age <5ys has a strong relation to severe anemia hemoglobin<5g per ul in severe falciparum malaria.

Key words: Severe malaria, parasite density, severe anemia.

Frequency of benign and malignancy diseases in goiter: A review of 340 thyroidectomies

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Abstract

The objective of the study is to determine the patterns and frequency of thyroid diseases in patients underwent surgically treated goiter. The study is designed as a retrospective review of patients' charts who underwent thyroidectomy from 2007 to 2010. The data included sex, age, residence area and histopathological results. The total study subjects were 340 (314 females and 26 males). The mean age was 37.5 ± 12.2 years. The benign thyroid diseases constitute 325 (95.6%) while the thyroid malignant diseases were 15 (4.4%). The majority was papillary carcinoma 12 cases (3.5%). 60.9% of the thyroid diseases were multinodular goiter, followed by thyroid nodule (12.7%), follicular adenoma (8.2%), Hashimoto's thyroiditis (7.1%) and thyroid cysts (5.3%). The peak frequency of goiter was at the fourth decade of life (31.5%), followed by the third decade (28.2%) then the fifth (23.5%).

The majority of patients (66.8%) were from highland areas with an average elevation of 1600 to 2200 meters above sea level.

We conclude that the majority of thyroidectomies were done for multinodular goiters. Malignant thyroid diseases were predominant in females and the majority were papillary carcinomas. The study is an attempt to compile the pattern of thyroid diseases in goiter. Further comprehensive studies are needed to find out the true indices of the incidence and prevalence of the different types of thyroid diseases in the highlands, as well as the lowlands, in Yemen.

Key words: Goiter, thyroidectomy, pattern, frequency Algamhoria Teaching Hospital, Aden .

The main causes of teeth loss in patients who need oral rehabilitation

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Abstract

There are many reasons for tooth loss. The causes of tooth loss should always be clearly ascertained as it may indicate the prognosis for the remaining teeth. In our study 103 patients who need prosthodontics treatment were analyzed, during the period from 2009-2010, and were divided into 3 groups.

According to gender, the male (90 cases) represent 87.4% and the female (13 cases) represent 12.6%. The highest age group is 56-65 years by (34 cases) represent 33%, followed by age group 66-75 years by (22 cases) represent 21.4%, then 45-55 years by (31 cases) represent 30.1%, <45 years by (10 cases) represent 9.7%, >75 years by (6 cases) represent 5.8%.

According to oral diseases periodontitis is 72.8%, trauma is 13.6% and caries is 13.6%. The periodontitis has the highest value with almost high percentage among other oral diseases.

According to systemic disease, Diabetes represents (28%), Asthma represents (2.7%), Hypertension represents (1.3%), Gastritis represents (1.3%), Cardiovascular disease represents (1.3%), and Diabetes & hypertension represent (2.7%) whereas healthy patients represent (62.7%).

Concerning oral hygiene, patients have periodontitis with bad oral hygiene represent (44%), with good and fair oral hygiene represent (22.7%) and (33.3%) respectively. The percentage of patients who have trauma with bad oral hygiene represent (57.1%), with good and fair oral hygiene represent (28.6%) and (14.3%) respectively, The percentage of patients who have caries with bad oral hygiene represent (42.9%), with good and fair oral hygiene represent (21.4%) and (35.7%) respectively.

In our results, the main causes of teeth loss are periodontitis, diabetes mellitus, and bad oral hygiene. The high percentage is in the age group 56-65 years 33%. For treatment evaluation, the percentage of patients with complete denture and periodontitis is 58.7%, with partial denture 29.3%, both of them (P,C) represent 12%.

Key words: Teeth loss, periodontitis, diabetes mellitus, .complete and partial denture.

PHYSICS

Study of optical constants and optical energy gap of anthracene and naphthalene doped-polystyrene films

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Abstract

Different composites prepared from polystyrene films doped individually, with both anthracene and naphthalene at concentration ratios of (28%, 33%, 37% and 41% (wt/wt)), have been investigated for their optical properties, by using UV/visible spectroscopic measurements (i.e., absorption, transmission and reflection), in a region of 200 to 1100 nm. The optical constant, such as absorption coefficient(α), refractive index (n), extinction coefficient(K) and dielectric constant(ϵ) show spectral dependence behaviour for all prepared composites over all the range of spectra. The optical energy gap (E_{opt}) is decreased with the addition of anthracene dopant from a higher value of 3.56 eV at lower concentration of 28% to a lower value of 3.19 eV at a higher concentration of 41% while it does not change for naphthalene composite films. It remains constant at 3.56 eV. Besides, the value of Urbach energy E_u decreases with the increase of anthracene and naphthalene concentrations, while the value of B is increased.

Key words: naphthalene , anthracene ,polystyrene , optical constants , optical energy gap.

ARABIC TITLES

AGRICULTURAL SCIENCES

Influence of Yemeni Honey addition on the growth of *Lactobacillus acidophilus* in sour milk (Rayb)

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Abstract

Acidophilus sour milk (Rayb) has good acceptability from Yemeni consumers. This investigation aims at studying the influence of (3) the concentrations of Yemeni Honey (Sidr) on the growth of *Lactobacillus acidophilus* (Rayb). The experiment consists of manufactured sour milk (Rayb) in laboratory with 3% of *Lb. acidophilus* starter to make four treatments as the following: 1- A. 2- B. 3- C. 4- D. In the last three treatments, a quantity of Sidr honey (1, 3 and 5 grams) is added to 100 ml of milk, while the premier treatment (1-A) is left without any quantity of Sidr honey (control). The treatments are repeated five times and is stored in a refrigerator at 5⁰ C for a period of 6 days .The results have shown that pH values are decreased and the total count of bacteria is increased in all treatments. The best treatment is (D) into which the percentage of bacteria is increased reaching 14.57 %, compared to (1-A) treatment. In conclusion, Sidr Honey lead to promote the growth and biologic activity of *lab. acidophilus* in sour milk (Rayb).

Key words: Sidr Honey, *Lactobacillus acidophilus*, sour milk (Rayb).

Specific composition for dominant crop of *Sorghum bicolor* (L.) Moench and accompanying weeds investigated in Al- Hauta and Tuban district, Lahj- Governorate-Yemen

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Abstract

This study was done in two seasons: 2003 – 2004 and 2004- 2005, in the fields of *Sorghum bicolor* (L). The results shown several indicators and general characteristics. Concerning the results of dominance and abundance, plant species, Gramineae, generally showed much dominance and abundance, whereas the vertical physiognomic results showed that there was an effect of dominant crop of *S.bicolor* on the accompanying weeds as the vertical physiognomic measuring of weeds group was as the first level (I).

Key words: *Sorghum bicolor*, accompanying weeds, Specific composition, Al-Hauta - Lahj- governorate.

Evaluation of antagonistic effectiveness of Fungi, Bacteria and some organic additives in controlling disease complex of the Nematode *Pratylenchus* sp. and the Soil – borne pathogenic *Fungi Fusarium Solani* and *Macrophomina Phaseolina* on papaya plant

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Abstract

A nursery experiment was conducted at the Fruit Nursery Section of El – Kod Agricultural Research Center, during 2009/2010 and 2010/2011 seasons. The objective of this study is highly concerned on the evaluation of the effectiveness of fungi *Trichoderma harzianum* and *Aspergillus niger* , bacteria *Bacillus thuringiensis* and organic additives sesame oil - seed cakes and dried sardine fish to the soil before or after seeding in order to control pathogenic complex of the nematode *Pratylenchus* sp. and the soil – borne pathogenic fungi *Fusarium solani* and *Macrophomina phaseolina* on Papaya Plant. Before seeding, treated soil showed highly significant ($p=0.05$) growth rate than after treated for all papaya trials except dried sardine fish treatment, whereas plants death rate and severity of the pathogenic complex decreased significantly. Therefore, fungus species *T. harzianum* reveals superiority in controlling the pathogenic complex, followed by *A. niger* and bacteria *B. thuringiensis* and then sesame oil-seed cakes.

Key words: Biological control, organic additives, *pratylenchus sp.*, *Fusarium solani*, *Macrophomina phaseolina*, Papaya Plant.

Isolation of entomopathogenic nematodes from Hadramout costal province soil

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Abstract

266 Soil samples were collected, during the period from 20/10/2009 to 11/1/2011, from 85 sites of 46 randomly selected regions representing Hadramout coastal directorats to check the presence of Entomopathogenic nematodes (EPNs) by using Galleria baiting technique. Eight samples (3%) were positive, of which 7 contain *Heterorhabditis* genera found at 0.90 – 92.85 km. far from the sea shore and at 7.0 – 829.5 m. above the sea level. The last one sample had *Steinernema* genera found at 93.00 km. far from shore and at 829.5 m. above the sea level . *Heterorhabditis* isolates were found in soil called loam – loamy sand which had pH 7.59 – 8.02 EC 2.54 – 13.24 and O.M. 0.89 – 2.69 %, whereas *Steinernema* isolate was found in loamy soil sample which had pH 8.00 EC 2.57 and O.H. 1.55 % .

Key words : Entomopathogenic , nematodes , Hadramout , *Galleria* , *Heterorhabditis* , *Steinernema*.

Peanut wilt disease: Its causal agent and prevalence in Abyan Governorate, Republic of Yemen

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Abstract

Abyan Governorate is considered as the major producer of peanut in Yemen. Wilt of peanut plants in many fields in this governorate is common. During the growing season 2009 / 2010, a survey study was conducted to investigate the prevalence and

causal agents of this disease in the delta of Bana Valley. The survey comprises 17 fields located in four different areas in the north and one area in the south of the valley's delta. Our results of our survey indicated a high incidence of the infection in Al-Rumailah and Halmah areas reaching 53.5 and 47.5% respectively. However, the fields in Ba- Tais and Al- Housn areas in the northern site and in Al- Kod in the southern site of the delta were relatively less affected. Laboratory inspection confirmed the presence of *Macrophomina phaseolina* and *Aspergillus niger* in the roots of the infected peanut plants. *A. niger* occurred more frequently in diseased roots and causing crown rot disease of peanut. Our finding is the first registration of this disease in these regions. *M. phaseolina* has been reported in previous studies and appeared less frequently on the infected peanut plants. As a result of our survey, both of the tow fungi form a fungal complex causing wilt disease of peanut plants in Abyan Governorate

Key words: Peanut wilt, Crown rot, *Macrophomina phaseolina*, *Aspergillus niger*, Abyan, Yemen.

BIOLOGY

Survey and morphological study of Brachyuran crabs (Family:Portunidae – Order : Decapoda) in Aden coasts at the Gulf of Aden.

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Abstract

This study converse as the first study to the field of Brachyuran crabs at the Gulf of Aden, Aden Governorate. It's aim is to record some species of brachyuran crabs from Portunidae family in Aden coasts, became of the lacks of records and documentation of brachyuran crabs. 5 locations in the coast of Aden have been chosen starting from Al-Alam district east of Aden, at the following coordinate 12°. 55. 523 N, 45°. 05. 348 E, to the last (end) district of Qawah west of Aden at the following coordinate 12°. 40. 186 N, 44°. 25. 002 E.

14 species of the Portunidae family are recently available and it belong to 5 genera. Out of the 14 species, 12 species have been the first record in Aden coasts. A

total Aden of 90 specimens have been collected by hand, hand nets, fish nets, deep diving of (0 – 4 m), and by the help of local fishermen .

Key words: Brachyuran crabs – Decapoda – Gulf of Aden .

ENVIRONMENT

Medicinal plants used for the treatment of some diseases in Al-Shimiatiin District (Taiz Governorate)

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Abstract

Human being used plants since being created by God. Various ways of using plants and their products have been known such as food, medicines, etc. This study emphasizes on the medicinal use of natural wild plant in this area.

During the survey work, it is found that 37 species belong to 34 genera and 24 families.

Key words: Plant products, medicinal plants, genera.

Ethnobotanic for wild plants in Abyan Delta

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Abstract

Delta Abyan is one of the alluvial components of Wadi Bana, which flows in the Arabian Sea, and one of the most fertile areas of the coast of Yemen because it is located between the valley of Bana in the west and Hassan in the east. The importance of Delta Abyan comes as it contains a number of valleys such as Wadi Bana and Wadi Hassan, in addition to 3 sub-valleys, which are Harab, Amharriah, Amsuhybiah. The existence of these different valleys has helped in plant diversity of the Delta. The different types of plant species have lots of benefits to the people of Delta Abyan, like therapeutic, forage,

fuel, in addition to other uses for construction and other works. Through the study, the analysis of the questionnaire has shown that there are 70 plant species belonging to 62 genera, and 29 families are used for different purposes.

Key words: Delta Abyan, components of the iceberg, plant diversity, uses popular .

ENGINEERING

The impact of urban random growth and visual distortion on the modern architecture in Aden Governorate "A case study of Al-Mansoura district "

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Abstract

The impact of urban random growth and visual distortion on the modern architectural in Aden Governorate: A case study of Al-Mansoura district. This area is facing problems of losing its architectural identity, such as urban random growth and visual distortion of the general view of the city. These problems can be observed clearly in the residential blocks that were built in the eighties of the last century.

The causes of these problems are due to the deterioration of the security, inability for the local council to maintain the facades of the residential buildings, in addition to the proliferation of slums that were built around these residential areas. The result of these problems has led to unacceptable urban environment, seriously affecting the urban architectural fabric and causing a negative effect on the social life of the community.

In this research paper, the concept of the visual distortion is investigated by studying and comparing the pictures, as well as giving some recommendations to improve the current situation by involving the local councils with some non-governmental organizations to develop standards, provision of facilities, and laws enforcement to get benefit of it in future projects.

Key words: Architectural Identity, Visual Distortion, Random Construction, Urban Fabric.