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Short Communications:

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CHEMICAL CONSTITUENTS OF PROSOPIS GLANDULOSA

Part I.—Isolation of Prosopol, Prosopenol and β-Sitosterol

M. MANZOOR-I-KHUDA,* S. A. ABBAS and W. A. ZAIDI

Drugs, Pharmaceuticals and Pesticides Division, Central Laboratories, Pakistan Council of Scientific and Industrial Research, Karachi

(Received August 24, 1967)

Two new crystalline substances designated as prosopol, m.p. 83.5°C, and prosopenol, mp.p.245°C, have been isolated from *Prosopis glandulosa*. β-Sitosterol, m.p. 136°, has been isolated and identified.

HANTZSCH SYNTHESIS IN AQUEOUS SOLUTION AT LOW pH RANGE. PART I

A. EHSAN

West Regional Laboratories, Pakistan Council of Scientific and Industrial Research, Lahore

KARIMULLAH

Defence Science Organization Cell, West Regional Laboratories, Lahore

(Received February 6, 1967; revised November 22, 1967)

The synthesis of Hantzsch ester I_b in buffered solutions at a pH of 3-10 has been studied, It is observed that I_b is obtained in good yield (1-53%) at pH 3.25 to 5.0 in 1.0N acetic acid medium. This is in contrast with the observation of Haley and Maitland. The yellow impurity noted by them contains the pyridine derivative II_b along with some other compounds. β-Aminocrotonic ester (III) and α-ethylidene ethyl acetoacetate (IV) are the only intermediates during the formation of I_b. The 1,5- diketone reported by Knoevenagel and Klages does not give I_b with ammonia under the epxerimental conditions. **Instead, a compound of structure VI is formed. The molecular ion at m/e 285 establishes** the molecular formula of VI as $C_{14}H_{23}NO_5$. The NMR spectrum supports structure VII in some detail.

STRUCTURE OF CALAMONIC ACID

M. Amjad Ali

Drugs and Pharmaceutical Division, Central Laboratories. Pakistan Council of Scientific and Industrial Research, Karachi

(Received June 7, 1966 ; revised July 7, 1967)

Calamonic acid has been shown to be 2, 4, 5-trimethoxybenzoic acid.

CHEMICAL EXAMINATION OF THE LEAVES OF IXORA PARVIFLORA VAHL. (RUBIACEAE)

M. Amjad Ali and (Miss) Zulekha Kapadia

Drugs and Pharmaceutical Division, Central Laboratories, Pakistan Council of Scientific and Industrial Research, Karachi

(Received August 6, 1966; revised July 31, 1967)

From the leaves of *Ixora parviflora* Vahl., two pure, crystalline alcohols, m.p. 246-48° and 136-37°, a crystalline non-reducing sugar, m.p., 162.5-63°, and a reducing sugar have been isolated. Of the two alcohols, the one with m.p. 246-48° has been found to possess the molecular formula $C_{30}H_{50}O_2$ and is proved to be a diol as it gave a diacetyl and dibenzoyl derivative. This compound has been tentatively designated as "ixorol." The other alcohol, m.p. 136-37°, has been identified as β-sitosterol. The non-reducing and reducing sugars have been identified as D-mannitol and D-glucose respectively. D-Mannitol has been found to be present in the leaves to the extent of 0.1%.

ESTIMATION OF POTASSIUM DICHROMATE OR CHROMATE AND HYDROGEN PEROXIDE IN THE PRESENCE OF EACH OTHER

FARHATAZIZ and GHAZANFAR A. MIRZA

Atomic Energy Centre, Ferozepur Road, Lahore

(Received February 16, 1965)

Hydrogen peroxide can be determined in the presence of potassium dichromate concentrations not exceeding 700 μM or potassium chromate concentrations not exceeding 1400μM, by its reaction with potassium ferricyanide in 1N KOH solutions. The decrease in potassium ferricyanide concentration is measured spectrophotometrically at 418 mμ. An extinction coefficient value of 959 cm^{-1} $mole^{-1}$ was determined for ferricyanide in 1N KOH at room temp (29°C). Potassium dichromate can be determined directly in the presence of hydrogen peroxide in alkaline solution by its absorption at 373 mμ. The extinction coefficient value for potassium chromate above pH 9 is 4690 cm^{-1} $mole^{-1}$ and the value calculated for dichromate concentrations is 9380 cm^{-1} $mole^{-1}$.

ION EXCHANGE CHROMATOGRAPHY OF IRON, MOLYBDENUM AND TITANIUM

MOHAMMAD AKRAM KHATTAK

North Regional Laboratories, Pakistan Council of Scientific and Industrial Research, Peshawar

(Received August 2, 1966; revised August 26, 1967)

A method has been worked out for the rapid separation of iron, molybdenum and titanium. The mixture of these cations in 0.1M hydrochloric acid is added to an anion exchanger and eluted with the same acid to remove iron and titanium. Finally, molybdenum is eluted with 1M hydrochloric acid. The mixture of the two cations (Fe^{III}, Ti^{IV}) in 5.5M hydrochloric acid is then adsorbed in an exchanger and eluted with the same acid to remove titanium and iron is finally eluted with water.

STUDY OF SOME INDIGENOUS MINERALS BY DTA

M. A. Qaiser, M. K. Ali and A. H. Khan

North Regional Laboratories, Pakistan Council of Scientific and Industrial Research, Peshawar

(Received October 10, 1966; revised March 7, 1967)

Thermal characteristics of some of the indigenous minerals such as clays, asbestos, talc, bauxite, calcite, magnesite and dolomite have been studied by means of a differential thermal analysis apparatus assembled at North Regional Laboratories.

SOME EXPERIMENTS IN THE PREPARATION OF GLASS-CERAMICS

F. A. Faruqi, J. Hakim and Mohammad Aslam

Glass and Ceramics Division, West Regional Laboratories, Pakistan Council of Scientific and Industrial Research, Lahore

(Received September 16, 1966; revised July 11, 1967)

A few compositions of glass ceramics have been developed and their improved physical and mechanical properties obtained and discussed. The experimental results show that glasses studied lend themselves especially well to be converted into glass ceramics of high quality.

BENEFICIATION OF LOW GRADE LATERITES FOR THE PRODUCTION OF ALUMINA

S. M. Ali and Mohammad Amin

North Regional Laboratories, Pakistan Council of Scientific and Industrial Research, Peshawar

(Received October 22, 1966)

Beneficiation of low grade laterite ores has been investigated by (i) soda-sintering process, (ii) soda-lime, one-step sintering process and (iii) soda-lime, two-steps sintering process with 20% sodium carbonate leaching. The latter process gives alumina of sufficient purity suitable for the extraction of metal and preparation of aluminium compounds. The recovery of alumina is about 92%.

PREPARATION, PURIFICATION AND CRYSTALIZATION OF HORSE-RADISH PEROXIDASE COMPONENTS

HASSAN M. SALEM*

Biological Science Department, Purdue University, Lafayette, Indiana, U. S. A.

(Received July 28, 1967)

A simple method has been described for the preparation of pure horse-radish peroxidase. Electrophoretic studies of the peroxidase revealed the presence of five components. The four major components of the enzyme were separated in a purified form by ion exchange chromatography. Fine needle-shaped crystals were obtained under the conditions of 15 mg/ml enzyme and 55 % saturation of ammonium sulphate.

EFFECT OF CALCIUM ON THE UTILIZATION OF PROTEIN CONCENTRATE

HABIBULLAH, MOHAMMAD KHAN and ALI EHSAN

West Regional Laboratories, Pakistan Council of Scientific and Industrial Research, Lahore

(Received August, 3, 1966; revised December 12, 1967)

A simple method for the preparation of calcium salts of various proteins has been evolved by which the quantity of calcium increases from 1 to 3%. This method will prove to be more economical than the corresponding known method.[8] The growth tables show the utility of these calcium salts in the development of the body. Protein efficiency ratio (PER) and digestibilities have been determined and their values indicate the acceptance of these salts both nutritionally and organolepticallly.

SOME FACTORS AFFECTING THE SEED PRODUCTION IN PLANTAGO PSYLLIUM CROP

S. M. A. KAZMI* and ARIF J. AHMAD

North Regional Laboratories, Pakistan Council of Scientific and Industrial Research, Peshawar

(Received November 18, 1966; revised July 18, 1967)

Plantago psyllium Linn. growing wild in West Pakistan, was cultivated. Effects of soil pH, texture, manure and fertilizers on the production of psyllium seeds have been discussed. It has been observed that by adopting suitable methods, the crops of *P. psyllium*, Linn. could be raised, profitably, for commercial exploitation in West Pakistan.

EFFECT OF CL-50, A NEW SYNTHETIC FUNGICIDE ON CERTAIN FUNGI

SHAHID H. ASHRAFI, G. MUSTAFA ALI, S. HAFIZ and RIAZ I. ZUBERI

Central Laboratories, Pakistan Council of Scientific and Industrial Research, Karachi

(Received April 10, 1966)

CL-50, a new fungicide, is effective in the range of 0.024% to 8.4% active ingredient against *Aspergillus niger*, *Heliminthosporium hawaiinese*, *Alternaria solani* and *Fusarium* sp. The methods of spray on growth in petri dishes, diffusion of toxic substance in liquid and solid media, and finally measurement of inhibition of growth zones by cavity method were used. CL-50 is two to ten times more effective than Fernasan, Copper-A, Dithane Z-78, Makrolin and Perenox.

A PRELIMINARY SURVEY OF AIR-BORNE FUNGUS FLORA IN THE VICINITY OF CENTRAL LABORATORIES, PAKISTAN COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH, KARACHI

(Mrs.) Nishat Rizvi, (Miss) Ahmedunnisa and S. Iftikhar Ahmed

Central Laboratories, Pakistan Council of Scientific and Industrial Research, Karachi

(Received May 18, 1967)

A preliminary survey of air-borne mould flora in the vicinity of Central Laboratories, P. C. S. I. R., Karachi was conducted. Petri plates were exposed against the air current at 5 ft to 25 ft from the ground level. Thirty-two species, belonging to fifteen genera, namely *Acrospiera*, *Alternaria*, *Aspergillus*, *Chaetomium*, *Cladosporium*, *Cunninghamella*, *Curvularia*, *Fusarium*, *Helminthosporium*, *Malustela*, *Paecilomyces*, *Penicillium*, *Rhinocladiella*, *Scopulariopsis*, and *Streptomyces*, are reported.

COPROPHILOUS FUNGI OF WEST PAKISTAN. PART 1. – KARACHI

S. IFTIKHAR AHMED and FATIMA ASAD

Central Laboratories, Pakistan Council of Scientific and Industrial Research, Karachi

(Received June 16, 1967)

During the study of coprophilous fungi from Karachi, a total of eleven species belonging to Ascomycetes have been reported. The two genera reported from West Pakistan for the first time are: ***Delitschia*** and ***Trichodelitschia.*** The species new to this part of the world are : *Ascobolus subglobosus*, *Ascophanus argenteus*, *Saccobolus violascens*, *Delitschia marchalii*, *Sporormia fimetaria*, *Trichodelitschia bisporula* and *Zygopleurage zygospora.*

THE FUNGI OF SOUTH WEST PAKISTAN. PART I

SHAKIL AHMAD KHAN and M. KAMAL

Agriculture Research Institute, Tandojam, West Pakistan

(Received August 2, 1967; revised October 18, 1967)

A NEW SPECIES OF THE GENUS ACANTHOTAENIA, WITH A NOTE ON ANONCHOTAENIA TROCHILII FROM A NEW HOST*

SULTANA WAHID

Department of Zoology, University of Karachi, Karachi

(Received August 17, 1967; revised September 18, 1967)

PROBLEMS CONCERNING FISHERY OF HILSA, HILSA ILISHA (HAMILTON) IN THE RIVER INDUS

M. Rahimullah Qureshi

Marine Fisheries Department, Karachi

(Received August 24, 1966; revised June 27, 1967)

Hilsa fish is liked very much by the people of southern West Pakistan. It used to reach Multan before the barrages were constructed on river Indus. By construction of Llyod's Barrage at Sukkur, its passage was cut down but the distance from the sea was quite enough for its breeding. After the construction of Ghulam Mohammad Barrage the distance for its ascent was considerably shortened and may result in depletion which can only be proved by further observations.

The biology, life-history and other habits have been studied. It has been found that the fish breeds to a very small extent down the barrage. The fish ladders provided in the barrage are unsuitable for the ascent of this fish. Measures for counteracting the adverse factors have been suggested and it has been recommended that detailed studies should be carried out in order to save this important fish from depletion.

HILSA FISHERY IN EAST PAKISTAN

M. Rahimullah Qureshi

Mannie Fisheries Department, Karachi

(Received September 16, 1966)

Hilsa is an anadromous fish. It supports a very important fisheries in East Pakistan and provides employment to a large number of fishermen in that province. It is found that the fisheries is depleting because of wanton destruction of adults and young ones and due to other causes. Its biology, migration and other habits have been studied. It is found in all the rivers of Ganges-Brahmputra system. There is a summer and a winter run for breeding. Breeding grounds have been located and its presence in the estuarine and foreshore have also been found. Measures have been suggested for its conservation so that more fish may be made available for consumption. It is recommended that in lieu of its importance to East Pakistan intensive research may be conducted and on the basis of the results obtained Hilsa fisheries may be developed.

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M. Rahimullah Qureshi

Mannie Fisheries Department, Karachi

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SHORT COMMUNICATION

ICE NUCLEATING ABILITY OF METEORITIC MATERIAL

M. MUNIR QURESHI
Dawood College of Engineering and Technology, Karachi

And

J. MAYBANK
Physics Division, Saskatchewan Research Council, Saskatoon, Canada

(Received October 18, 1966)

KINETICS AND MECHANISM OF SULPHOXIDE OXIDATIONS, SOLVENT EFFECTS IN THE OXIDATION OF DIPHENYL SULPHOXIDE WITH PEROXYBENZOIC ACID

SHAFIQ AHMAD KHAN AND MUHAMMAD ASHRAF
West Regional Laboratories, Pakistan Council of Scientific and Industrial Research, Lahore

(Received December 26, 1966; revised August 4, 1967)

ISOLATION OF β-SITOSTEROL FROM CAPPARIS APHYLLA

M. MANZOOR-I-KHUDA* AND (MISS) Z. KAPADIA
Drugs, Pharmaceutical and Pesticide Division, Central Laboratories, Pakistan Council of Scientific and Industrial Research, Karachi

(Received June 22, 1967)

PREPARATION OF DINITROCHLORO BENZENE FROM MONOCHLORO BENZENE WITH COMMERCIAL NITRIC ACID

SHAISTA BEGUM, NAEEM SHAKIR AND M. ASLAM
West Regional Laboratories, Pakistan Council of Scientific and Industrial Research, Lahore

(Received November 1, 1967)

STUDIES IN THE SEPTUM FORMATION OF NEUROSPORA CRASSA

S. R. H. RIZVI
Central Laboratories, Pakistan Council of Scientific and Industrial Research, Karachi

(Received August 3, 1966)

THE INCIDENCE OF A NEMATODE, PROCAMALLANUS HETEROPNEUSTUS IN THE STOMACH OF HETEROPNEUSTES FOSSILIS

A. K. ATAUR RAHMAN AND M. Y. ALI
Directorate of Fisheries, Government of East Pakistan, Dacca

(Received July 8, 1966)

AN ACCOUNT OF FISHES OF CAMPBELLPUR DISTRICT, WEST PAKISTAN

I. U. NAIK AND S. R. ALI
Fisheries Research Laboratories, Rawalpindi and Zoology Dept. Gordon College, Rawalpindi

(Received February 6, Revised July 1967)

A NOTE ON ARGULUS SPECIES WHICH CAUSED MORTALITY IN CARPS IN THE EXPERIMENTAL CISTERN OF THE FRESH WATER RESEARCH STATION, CHANDPUR, EAST PAKISTAN

A. K. ATAUR RAHMAN
Fresh Water Research Station, Chandpur, Comilla, East Pakistan

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