

CONTENTS OF VOL. 61(2011)

AN ENUMERATION OF LESS KNOWN
ENDANGERED PLANT SPECIES OF INDIA

Prof. R.C. Srivastava

ANTIMALARIAL EFFICACY OF HOMEOPA-
THIC DRUGS *ARTEMISIA VULGARIS* AND
CURCUMA LONGA AGAINST *PLASMODIUM*
BERGHEI IN BALB/c MICE'

Dr. Upma Bagai

FLOWERING PLANTS OF RAIGARH AND
SANNA DISTRICTS CHHATTISGARH STATE OF INDIA

R.C.Srivastava, N.C. Rathakrishnan and Ram Saran

ON A SUMMATION FORMULA FOR A BASIC
KAMPÉ DE FÉRIET FUNCTION

Lalit Mohan Upadhyaya

ROLE OF INTER-PERSONAL COMMUNICATION IN
HEALTH:AN ANTHROPOLOGICAL STUDY

Dr. Achala Gupta and Dr. A.K. Sinha

CONTRIBUTION TO THE KNOWLEDGE OF DESMIDS
OF DEHRADUN, UTTARAKHAND STATE, INDI

Iqbal Habib, Barkha and U.K. Chaturvedi

ESTIMATES OF GROWTH DEPENDENT CHANGES
IN LIVER SIZE, COMPOSITION AND PHOSPHATASE
ENZYMES IN *CYPRINUS CARPIO* JUVENILES

Meenakshi Jindal , K. L. Jain, and Simmi

ESTIMATION OF ACTIVITY OF SOME METABOLIC
ENZYMES IN THE FISH *CYPRINUS CARPIO* AS A
FUNCTION OF ITS GROWTH

Meenakshi Jindal, K. L. Jain and Simmi

IMPACT OF MIGRATION ON PHYSICAL
AND PSYCHOSOCIAL HEALTH: SOME
CAUSATIVE FACTORS

Reetinder Kaur and A.K.Sinha

IN VITRO ANTIMICROBIAL ACTIVITY OF MOSS
TIMMIELLA ALATA HERZOG

Dinesh K Saxena and Uma Yadav

GEOMORPHOLOGY AND ECOLOGY OF
HILLSTREAMS OF THE RIVER BEAS IN THE
VICINITY OF UPPER HIMALAYAS OF HIMACHAL
PRADESH, INDIA

M.S.Johal, M.Verma and Y.K.Rawal

BRYLOGIAL FLORA OF KEONJHAR DISTRICT OF
ODISHA, INDIA

P.K.Dash and D.K.Saxena

SYSTEMATIC ACCOUNT ON *BRACHIONUS* (ROTIFERA)
FROM SUKHNA LAKE, CHANDIGARH

Anil K. Tyor and Deepti Chawla

ABSTRACTS OF THE PAPERS APPEARED IN THE **VOLUME 61(2011)**

AN ENUMERATION OF LESS KNOWN ENDANGERED PLANT SPECIES OF INDIA

***R.C.Srivastava**

Botanical Survey of India, Kolkata-700064

Abstract

The paper throws light on the less known species of vascular plants (Angiosperms and Gymnosperms) and Pteridophytes) of India. Present study has revealed that a good number of species of vascular plants have not been relocated after their discovery. Several species are still restricted to their type localities and there are many species which have been collected only once or twice after their discovery. These species are enumerated in this communication with hope that these may be relocated during survey and exploration work in future.

Key words: *Angiosperms/Gymnosperms/Pteridophytes/India/Extinction/ Type specimen*

ANTIMALARIAL EFFICACY OF HOMEOPATHIC DRUGS ARTEMISIA VULGARIS AND CURCUMA LONGA AGAINST PLASMODIUM BERGHEI IN BALB/c MICE

***Upma Bagai, Shagun Kalia, Isha Sharma and Neha Sylvia Walter**

Department of Zoology, Panjab University, Chandigarh-160014.

Abstract

Antimalarial efficacy of mother tincture and 6, 30 and 200 potencies of *Artemisia vulgaris*, alone and in combination with *Curcuma longa* (Φ) was checked against *P. berghei* infection in BALB/c mice. Combination therapy was more effective than monotherapy as evident from chemosuppression ($\geq 65\%$) and mean survival time (≥ 20 days) as compared to Artesunate (100 mg/kg) and Artesunate (4mg/kg) + Sulfadoxine (1.25 mg/kg) designated as positive controls. ALP activity increased significantly ($p < 0.0001$) in all test groups except *A. vulgaris* (Φ) + *C. longa*(Φ)-treated group. Bilirubin significantly increased in monotherapy groups than combination groups as compared to standard drugs. *A. vulgaris* (potency) groups exhibited normal creatinine levels in monotherapy and urea levels in combination against *P. berghei* infected control. The study points towards better antiplasmodial efficacy of 30 and 200 potencies of *A. vulgaris* in combination with *C. longa*.

Keywords: *P. berghei, Artemisia vulgaris, Curcuma longa, mean survival time, chemosuppression.*

FLOWERING PLANTS OF RAIGARH AND SANNA DISTRICTS CHHATTISGARH STATE OF INDIA

***R.C.Srivastava, N.C. Rathakrishnan and Ram Saran**

Botanical Survey of India, Kolkata-64

Abstract

Flowering plants found in Raigarh and Sanna Districts of Chhattisgarh have been enumerated. Brief information about synonyms, vernacular names, habit, habitat, frequency of occurrence (rare/common), place of collection and flowering/ fruiting period are provided.

Key words: *Flowering Plants, habitat, characteristics, Chhattisgarh*

ON A SUMMATION FORMULA FOR A BASIC KAMPÉ DE FÉRIET FUNCTION

***Lalit Mohan Upadhyaya**

Department of Mathematics, Municipal Post Graduate College, Mussoorie, Dehradun, Uttarakhand, India- 248179.

Abstract

The present paper carries ahead my previous study [Upadhyaya, 2008] of a basic analogue of a Kampé de Fériet function in two variables which follows as a particular case of a generalized Kampé de Fériet function appearing in eq.(282,283), p. 349 of Srivastava and Karlsson [1985]. A summation formula has been deduced here for the function under study along with its different possible forms.

Keywords: *Kampé de Fériet function, basic, summation formula.*

ROLE OF INTER-PERSONAL COMMUNICATION IN HEALTH: AN ANTHROPOLOGICAL STUDY

***Dr. Achala Gupta and Dr. A.K. Sinha**

Department of Anthropology, Panjab University, Chandigarh-160014

Abstract

The present research paper focuses on the understanding of the role of communication in influencing decision in health related issues. The present study was conducted in an urban area of Chandigarh. The study shows that people communicate health related matters with their friends, family and relatives. Majority of the people believed that the communication increases their awareness, remove some misconceptions/myths and also get benefited from other people's experiences who have faced similar health problems.

Keywords: *Communication, Health, Health problems, Mass media.*

CONTRIBUTION TO THE KNOWLEDGE OF DESMIDS OF DEHRADUN UTTARAKHAND STATE, INDIA

***Iqbal Habib, Barkha and U.K. Chaturvedi**

¹Department of Botany, Govt. Degree College, Budaun-243601, India

²Department of Zoology, Govt. Degree College, Budaun-243601, India

³Department of Botany, Bareilly College, Bareilly-243005, India

Abstract

The Present communication deals with morphotaxonomic enumeration of 32 taxa of desmids collected in and around Dehradun, Uttarakhand State during 2009-10. All these taxa are being recorded for the first time from this part of state.

Keywords: *Fresh Water, Algae, Desmidiaceae, Planktonic, Taxonomy.*

ESTIMATES OF GROWTH DEPENDENT CHANGES IN LIVER SIZE, COMPOSITION AND PHOSPHATASE ENZYMES IN *CYPRINUS CARPIO* JUVENILES

***Meenakshi Jindal , K. L. Jain, and Simmi**

Department of Zoology and Aquaculture, CCS HAU, Hisar-125004, India.

Abstract

Fish juveniles are frequently employed in laboratory studies and analysis of liver hepatosomatic index, composition and the activity of some metabolic enzymes are quite important parameters in determining fish health in general as well as in various toxicological studies. This study was aimed to investigate these parameters in juveniles of a communally available fresh water fish *Cyprinus carpio*, as an index of functional changes in liver during its early growth phase which could also be employed in assessing fish/liver health in various stress studies. The study revealed liver mass of 0.596 g (HSI value of 4.58) in fish fry at 0 day of its culturing in a pond, with a gradual increase up to 16.105 g (HSI 11.45) in 100 day old fingerlings. The liver glycogen and protein contents in *C. carpio* though showed a proportionate increase with the increasing fish weight, the glycogen contents however increased almost to double in first 40 days, whereas gain in liver protein contents in the same period of growth was only 40.69%, followed by a further decline in amounts to 28.3 % in the next 30 days. Protein amounts however were found again to increase by 53.82 % during 71-100 days of growth. Changes in all these parameters appears to be related with different nutritional and energy requirements of the fish, as the fish is said to exhibit a differential growth pattern as per gain in length and weight. This study suggests application of HSI and liver glycogen contents as the reliable parameters in various stress studies as a measure of liver health.

Keywords: *C. carpio, HSI, liver glycogen, liver protein, liver phosphatase enzymes and fish growth*

ESTIMATION OF ACTIVITY OF SOME METABOLIC ENZYMES IN THE FISH CYPRINUS CARPIO AS A FUNCTION OF ITS GROWTH

*** Meenakshi Jindal, K. L. Jain and Simmi**

Department of Zoology and Aquaculture, CCS H.A.U., Hisar-125004, India.

Abstract

Study was aimed to determine the changes in the activity of some metabolic enzymes in the early phase of fish growth in *Cyprinus carpio* as well as to identify the most active dehydrogenase to be applied as a clinical test to assess the fish and liver health. The study showed a rapid gain in fish length and the mass in the first 40 days of the growth of fish fry *i.e.* it showed a gain of 110.2 % in length and 97.1 % in mass. Growth with respect to both length and weight however declined gradually afterwards. Study of growth related changes in the activity of dehydrogenases (succinate dehydrogenase), glutamate dehydrogenase and pyruvate dehydrogenase in fish liver during the same phases of growth (0-130 days) *also* showed a rapid increase in activity of all the three enzymes from day 70 to the day 100; SDH being the most active enzyme showing a maximum increase of 101% over the first 40 day growth data as control. There was a total increase of 156.6, 40.0 and 56.5 %, respectively in SDH, GDH and PDH enzyme activities by the end of 130 days of growth. Data further showed a high significant regression in enzymatic activities with the increasing fish length and fish weight. As these enzymes are the key factor in regulating aerobic oxidation in a fish, increased enzymatic activity is a clear evidence of their increased metabolic needs to meet out additional energy requirements for a fast early growth. It suggests that testing the activity of these enzymes especially SDH in liver of the fish in its early growth phase could be useful as a reliable estimate of fish health and the liver damage under any environmental stress.

Keywords: *Fish growth, liver enzymes, metabolic enzymes, GDH, SDH and PDH*

IMPACT OF MIGRATION ON PHYSICAL AND PSYCHOSOCIAL HEALTH: SOME CAUSATIVE FACTORS

***Reetinder Kaur and A.K.Sinha**

Department of Anthropology, Panjab University, Chandigarh-160014

Abstract

Migration is one of the major demographic processes affecting world populations today. However, the knowledge of how social and cultural discontinuity affect health remains poorly developed. Social scientists have for sometime been interested in the adaptation of migrant group to complex urban setting, yet have not until very recently extended research to consider the physiological consequences of such an adaptation. Similarly, health scientists such as epidemiologists have treated the social and cultural dimensions of migration in a superficial manner while studying health among migrant population. The present paper is an attempt to assess the impact of migration on health and analysis of the causative factors involved.

Keywords: *Migration, Health, Anthropology of migration and Disease.*

IN VITRO ANTIMICROBIAL ACTIVITY OF MOSS *TIMMIELLA ALATA* HERZOG

***Dinesh K Saxena and Uma Yadav**

Department of Botany, Bareilly College, Bareilly, U.P. India

Abstract

The antimicrobial activity of the alcoholic and aqueous extracts of moss *Timmiella alata* Herzog growing on Kumaon hills was investigated against the bacteria *Escherichia coli*, *Bacillus mycoides*, *Staphylococcus aureus*, *Proteus mirabilis*, *Salmonella typhi* and the fungi *Aspergillus fumigatus* and *Fusarium oxysporum*. The study is an attempt to screen antimicrobial activity of moss *T. alata* extract collected from Jageshwar (29° 37.915; 79° 50.650') of Kumaon hills (Uttarakhand), India. Extracts of *T. alata* were tested against pathogens using disk diffusion and micro broth dilution techniques. Both the extracts showed remarkable activity against bacteria *S. typhi* and *E. coli* (20 mm and 15 mm). Minimum inhibitory concentration (MIC) was measured 3.74 and 2.40 mg/mL. For *F. oxysporum* zone of inhibition was 10 mm and MIC 0.851 mg/mL. In both extracts (alcoholic and aqueous), no inhibition was seen against *A. fumigatus* and *P. mirabilis*. Alcoholic extract of *T. alata* was found more effective than the aqueous. Therefore, the present study is on medicinal significance of bryophytes. This is the first time that the antimicrobial activity of the moss *T. alata* is reported. The results of the study need further scientific validation for use of the moss *T. alata* extract as a source of natural antimicrobial substance in the pharmaceutical industry.

Keywords: *Timmiella alata* Herzog, Moss, Antibacterial properties, Antifungal properties.

GEOMORPHOLOGY AND ECOLOGY OF HILLSTREAMS OF THE RIVER BEAS IN THE VICINITY OF UPPER HIMALAYAS OF HIMACHAL PRADESH, INDIA

***M.S.Johal, M.Verma and Y.K.Rawal**

Laboratory of Fish & Fisheries, Department of Zoology, Panjab University, Chandigarh-160014, India

Abstract

Geomorphological and ecological studies on hillstreams in the vicinity of upper western Himalayan region have not been carried out scientifically so far. It is estimated that 250 hillstream fish species out of a total of 1042 of the Indian freshwater fish species inhabit the Indian hillstreams, having varied body forms and sizes. The detailed information regarding the geomorphology of the Himalayan hillstreams, their fish fauna, biotic and abiotic factors and their interrelationships is fragmentary as the fish production from hillstreams is insignificant as compared to the fish productions of other water bodies like lakes and reservoirs. According to Hora's Satpura Hypothesis, the hillstreams of the Himalayan region played a very important role during Miocene period, when most of the Indian fish fauna of Malayan region migrated through a corridor which existed in the eastern Himalayas.

The origin of several Indian major rivers lies in the upper Himalayas which are the lifeline of Indian agriculture economy. Surprisingly, the water bodies of this region especially the western Himalayas have never been subjected to any ecological investigations. Keeping this fact in mind, an attempt has been made to study the geomorphology, fish fauna, biotic and abiotic factors and their interrelationships of eight sites of two streams namely Tirthan (Gushaini, Deori, Fagu Pul and Larji) and Sainj (Ropa, Shalwar, Tlara, Bihali) of the river Beas. In this paper, season-wise, period-wise data is not given, only the final data is presented in the form of tables for the purpose of discussion and to arrive at conclusions. The present communication deals with eight aspects namely stream morphology/hydrology, habitat structure and composition of biota in different habitats, physico-chemical factors, phytoplankton, benthos, zooplankton, ichthyofauna and Morista-Horn Index. Authors are of the view that the information presented in this communication shall form the base line data for future similar studies and for the comparisons. As no previous data on the ecology of hillstreams of upper Western Himalayas is available and not many studies have been done by earlier workers, the discussion part is comparatively short, whereas, observations have been analyzed in various forms. The plausible reasons for the absence of the earlier data on hillstream ecology are inaccessible terrain, occurrence of relatively poor biodiversity and low economic values of the water bodies in this region.

Keywords: *Himalayas, hillstreams, geomorphology, biodiversity.*

BRYOLOGICAL FLORA OF KEONJHAR DISTRICT OF ODISHA, INDIA

***P.K.Dash¹ and D.K.Saxena²**

¹*Biodiversity Conservation Division, Vasundhara, Orissa*

²*Department of Botany, Bareilly College, Bareilly, UP, India*

Abstract

Thirty four species of bryophytes comprising twenty four liverworts, two hornworts and eight mosses are being reported during the survey conducted from January 2007 to November 2008 for the first time from both Khandadhar and Gandhamardan hills in Keonjhar districts of Orissa. Some of the noteworthy species like *Conocephalum conicum*, *Dumortiera hirsuta*, *Targionia hypophylla*, *Pallavicinia lyelli*, *Lophocolea bidentata*, *Metzgeria hamata*, *Lunularia cruciata* and *Reboulia hemispherica* are in peril against the ongoing and upcoming mining activities in this region.

Key words: *Bryophytes, Khandadhar hills, mining, conservation.*

**SYSTEMATIC ACCOUNT ON *BRACHIONUS* (ROTIFERA) FROM
SUKHNA LAKE, CHANDIGARH**

***Anil K. Tyor and Deepti Chawla**

Department of Zoology, Kurukshetra University, Kurukshetra-136119, India

Abstract

The distribution of *Brachionus* spp. in the Sukhna Lake, Chandigarh was recorded from April 2009 - September 2009. Eight species of *Brachionus* were recorded which included *Brachionus plicatilis*, *B. forficula*, *B. caudatus*, *B. diversicornis*, *B. rubens*, *B. calyciflorus*, *B. angularis* and *B. havanaensis*.

Key words: *Brachionus*, *Sukhna Lake*, *Rotifer*

