

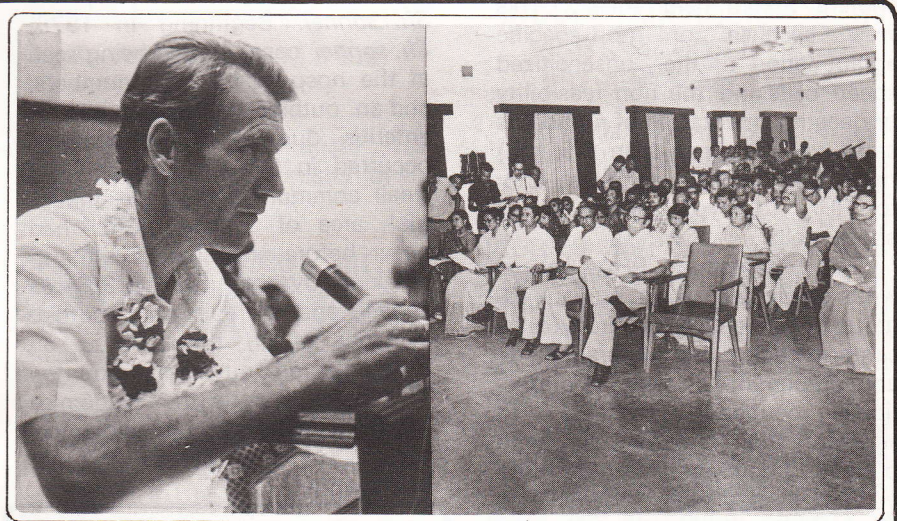
Glimpse

International centre for diarrhoeal disease research, Bangladesh
 NEWSLETTER

Volume 1
 Number 10
 October 1979

ICDDR,B STAFF WELFARE ASSOCIATION ACCORDS A RECEPTION TO DR. W.B. GREENOUGH, III, DIRECTOR

The ICDDR,B Staff Welfare Association (SWA) accorded a reception on July 4, 1979 to Dr. W. B. Greenough, III on his assumption of the Directorship of the new Centre. Among those who spoke during the occasion were Dr. M. M. Rahaman, Deputy Director, Dr. K. A. Al-Mahmud, President, SWA-Dacca, Mr. M. A. Wahed, Secretary, SWA-Dacca and Mr. A. K. M. Nazrul Islam of Administrator's Office. Mr. Wahed gave a brief biographical sketch
 (Contd. page-4)



Dr. W. B. Greenough, III, the new Director of ICDDR,B addressing in the reception given in his honour

A FISHERMEN'S COMMUNITY IN TEKNAF PROJECT AREA

Jaliapara of Shahpuridwip, an isolated, small community is situated at the southern part of Teknaf on the sandy bank of Naf river. It is about eight miles from Teknaf. In this small, but thickly populated community, settlement was believed to be established for fishing. It is still one of the best fishing centres in the locality. The community is surrounded by bushes and sandhills. The population is 1196, which is dispersed into 174 families. With the exception of a very few, the families are landless. The primary occupation of the community

is fishing in the Naf river and Bay of Bengal. A few people have their own fishing boats, fishing nets, but most are fishing labourers. (It is difficult to market the fish at Teknaf or far away, so they must be sold in lots to the fish merchants at a lower price. During the hot dry season, part of the catches are dried).

There is a primary school in Jaliapara, though with poor attendance, its presence is insignificant in general terms. Most of the villagers are illiterate and of lower socio-economic status.

From the beginning, the community had a problem - the scarcity of sweet water. Ditches and dug-

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ETHICAL REVIEW COMMITTEE

There have been a number of changes recently in the composition of the Ethical Review Committee (the Review Board on the Use of Human Subjects) of the ICDDR,B.

Dr. W. B. Greenough, III resigned from the Committee on his appointment as Director of the ICDDR,B. The Committee expressed its appreciation for the time and effort Dr. Greenough has put into the Committee and accepted his resignation with much regret. The Committee expressed similar feelings of appreciation and regret when they accepted the resignations of

(Contd. page - 3)

RECENT ICDDR,B PUBLICATIONS

1. Passive hemagglutination assays for quantitation of cholera anti-toxin: glutaraldehyde and chromium chloride used as coupling reagents to sensitize human erythrocytes with purified cholera antigen by **Ansaruddin Ahmed, K. Abdullah Al-Mahmud, George T. Curlin**. June 1979. (*Scientific Report No. 24*).

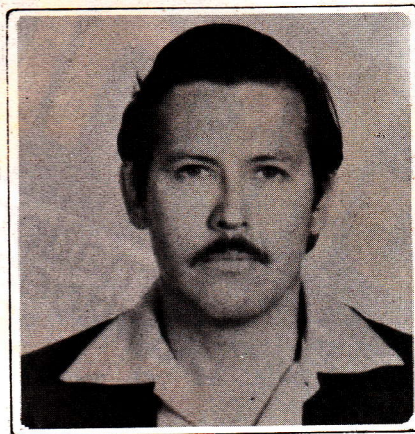
Previously described passive hemagglutination assays (PHA) for quantitation of cholera anti-toxin, which avoided animal assays such as the rabbit intracutaneous test, were found to be inadequate for use in large-scale serosurveys in connection with cholera toxoid field trials. This was because of non-specific agglutination of the unsensitized sheep cells and the non-feasibility of decomplexation of numerous small volume (less than 0.5 ml.) finger-prick plasma samples prior to PHA to avoid hemolysis of sheep cells.

Two alternative PHA assays were developed using human 'O' group, Rh negative erythrocytes as carrier particles and glutaraldehyde and chromium chloride as bifunctional coupling reagents to sensitize the erythrocytes with purified cholera antigen. Both these *in vitro* assays were specific and showed excellent direct correlations with the corresponding *in vivo* rabbit intracutaneous test. The glutaraldehyde-PHA assay, finally selected for its additional ability to stabilize the erythrocytes against hemolysis and its simpler methodology, correlated with another PHA test, using tanned chicken erythrocytes with simple coating of toxin. By titrations of 53 plasma samples from a Wyeth toxoid field trial in Bangladesh in 1974, this assay also showed an excellent correlation with the *in vivo* skin test ($r=0.917$). It showed a good reproducibility and a sensitivity of measurement up to 0.35 antitoxin units/ml. By its inhibition modification the toxin antigen can also be measured up to 0.3125 microgram of purified cholera toxin.

2. Investigation of an outbreak of dysentery due to *Shigella sonnei* in a small community in Dacca by **M. I. Huq**. June 1979. (*Scientific Report No. 25*).

Dysentery due to *Shigella sp.* is widespread in most of the developing countries of the world and also causes a great deal of morbidity and mortality in Bangladesh. The Cholera Research Laboratory, being the main treatment centre for diarrhoeal diseases, receives almost all the patients from Dacca and its suburbs. Until 1972, 93-95% of the shigella isolated were *Sh. flexneri*, the other types being very rare. From 1973 *Sh. dysenteriae* type 1 (*Shiga bacillus*) started appearing, but until 1975, there were very few *Sh. sonnei*. Beginning in 1976, *Sh. sonnei* cases started being seen in the hospital in large numbers, and an outbreak of severe gastroenteritis due to *Shigella sonnei* occurred in February, 1976, in a small community near the industrial area of Dacca. CRL had never before encountered an outbreak of dysentery due to *Shigella sonnei*, and there is no recorded evidence of an outbreak in an isolated community in this country. This paper reports the epidemiological, clinical and bacteriological aspects of the disease in that community.

SEMINAR AT ICDDR,B



Dr. L. J. Mata addressing a seminar at ICDDR,B

Professor L. J. Mata, Director, Institute of Research in Health (INISA), University of Costa Rica, and Member of the Board of Trustees of ICDDR,B, gave a seminar on "*The Uniqueness and Holiness of Maternal Milk*" on 29th June, 1979.

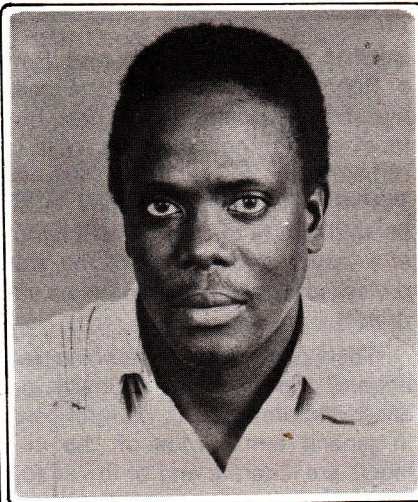
Dr. K. M. S. Aziz, Scientific Director, ICDDR,B presented a lecture on "*Impressions on the Structure and Functions of the Institute for Scientific and Technological Cooperation*" in a seminar on 6th July, 1979.

Mr. Shafiqul Islam of ICDDR,B presented a lecture on "*Inter-relationships among Certain Socio-economic Variables in a Rural Population of Bangladesh*" in a seminar on 13th July, 1979.

Dr. (Mrs.) Sarla Sharma, Lecturer in Pathology and Microbiology, M. G. M. Medical College, Indore, M. P., India, gave a seminar on "*Health Services and Laboratory Facilities in M. G. M. Medical College, Indore, M. P., India*" on 3rd August, 1979.

contract from 18th August 1979. Before joining ICDDR,B, Dr. Mutanda worked at the Medical Research Centre, Nairobi, Kenya as a Government Virologist in the Ministry of Health. There he studied the aetiology and epidemiology of acute gastroenteritis in early childhood. During his stay at ICDDR,B, Dr. Mutanda will conduct research in the field of microbiology in relation to diarrhoeal diseases.

AFRICAN SCIENTIST JOINS ICDDR,B



Dr. Labius N. Mutanda, M. H. Sc., Ph. D. joined ICDDR,B as an Associate Scientist on a two-year

VISITORS DURING JUNE 1979

Dr. Michael Apstein
Boston VA Hospital
Boston, Mass., U.S.A.

Mrs. Sharon Barnartt
211 Mary Louise
San Antonio, U.S.A.

Dr. Richard A. Cash
Harvard School of Public Health
Shattuck Street
Boston, Mass., U.S.A.

Dr. Eric R. Crystall
FAO/UNFPA Consultant
Nairobi, Kenya

Dr. R. Slooff
Royal Tropical Institute
Amsterdam, Holland

Dr. Clifford A. Pease
Deputy Director
Office of Health
Development Support Bureau
AID, Washington D.C., U.S.A.

His Excellency Mr. J.H.A. Hoyle
High Commissioner
Australian High Commission
Dacca, Bangladesh

(Contd. page-4)

LETTER TO THE EDITOR- IN-CHIEF

As a bacteriologist and epidemiologist for fifteen years in Sri Lanka with a special interest in diarrhoeal diseases, I have had the opportunity of reading many scientific publications on the research carried on at the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) in Dacca. The quality of these publications evoked a keen desire in me to personally visit the institution and acquaint myself with some of the research methodology at ICDDR,B. With the award of a WHO Fellowship, this became possible.

The ten days of my stay in April and May of 1979, first of all created a high sense of gratitude for the very best of hospitality extended to me by the staff of the ICDDR,B. I feel that this institution is a grand complex for diarrhoeal disease research - a complex where there is a coordinated programme of work in clinical medicine, microbiology, immunology, nutrition and epidemiology.

In other words, the research is directed towards all aspects of the community need for treatment, prevention and understanding of diarrhoeal diseases.

Having attained familiarity with the working of all branches of the laboratory, I devoted special attention to the ELISA technique for rotaviruses and enterotoxin assay both for LT and ST toxins. (The CHO cell toxin assay and the suckling mice tests respectively). The training I have had will be of immense value for introduction of these techniques in Sri Lanka. I thank the International Centre for Diarrhoeal Disease Research, Bangladesh for the placement given to me and to the WHO for the grant of the fellowship.

Dr. K. Velauthapillai, M.B.B.S.
(Ceylon), D.B. (Toronto),
D.P.H. (Liverpool)
Public Health Bacteriologist,
Epidemiology Unit, Ministry of
Health, Sri Lanka

ETHICAL REVIEW COMMITTEE

(Contd. from page-1)

two other valued members recently. The resignations are those of Mr. Justice Mustafa Kamal and Dr. Kamaluddin Ahmed. Mr. Justice Mustafa Kamal submitted his resignation on his promotion to the Bench. Mustafa Kamal, Barrister-at-law, was formerly the Advocate General of Bangladesh. Dr. Kamaluddin Ahmed, previously Professor of Pharmacology at the Institute of Post Graduate Medicine and Research in Dacca, submitted his resignation upon leaving to take up an appointment in Nigeria. The members of the Ethical Review Committee and the ICDDR,B wish Dr. W.B. Greenough, III, Mr. Justice Mustafa Kamal and Dr. Kamaluddin Ahmed every success in their new ventures.

The Committee has welcomed four new members to its meetings recently. In accordance with the resolution passed by the Board of Trustees in their last meeting, Dr. Z. Sestak has been appointed as the WHO representative on the Committee. Dr. Sestak is the

WHO Programme Coordinator in Dacca. Dr. T. A. Chowdhury, Professor of Obstetrics & Gynaecology at the Institute of Post-Graduate Medicine & Research, Dacca has been appointed as the Bangladesh Medical Research Council Representative on the Committee. Mr. Kazi Zahurul Alam, Barrister-at-law, Advocate, Supreme Court of Bangladesh, Dr. Khaleda Banu, Consultant Paediatrician, Shishu Hospital, and Mrs. Husnara Kamal, Assistant Professor, Institute of Social Welfare & Research, University of Dacca have also been appointed to the Committee. The Committee looks forward to working with these new members.

INDIAN MICROBIOLOGIST VISITS ICDDR,B AND PRESENTS LECTURES

Dr. (Mrs.) Prema Bhat, Professor of Microbiology, St. John's Medical College in Bangalore, India, and a WHO Fellow visited ICDDR,B for two weeks from 17th July to 1st August, 1979. During her visit she studied the methods of detecting enterotoxin producing *E. coli* and the ELISA test for rotavirus.

Dr. Bhat gave two seminars at ICDDR,B. In her first seminar on "*Jejunal Flora in Acute Gastroenteritis and in Control Subjects in Infants*" held on 20th July, 1979, Dr. Bhat discussed the results of a study done on jejunal microbial flora of Southern Indian infants, both healthy and with acute gastroenteritis. She suggested that when a potentially pathogenic bacterium was to be incriminated as a cause in acute watery diarrhoea, its demonstration in the jejunum might be an important criterion in establishing its pathogenicity.

In her other seminar on "*Bacillary Dysentery due to Multi Drug Resistant Strain of Shigella Dysenteriae Type 1 in Bangalore, India*" held on 27th July, 1979, Dr. Bhat discussed the studies done as part of a multi-centric project on *V. parahaemolyticus*

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RECEPTION TO DR. W.B. GREENOUGH, III, DIRECTOR

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of Dr. Greenough and Dr. Al-Mahmud read-out the Welcome Address on behalf of the ICDDR,B staff. Dr. Greenough and Dr. Rahaman recalled the achievement of the Centre and indicated that successful transition of the CRL into an international centre is much due to the best effort, hard work and dedication of the staff of the Laboratory as a whole.

VISITORS DURING JUNE 1979

(Contd. from page -3)

Dr. Michael H. Merson
Bacterial & Veneral Infections
World Health Organization
Geneva, Switzerland

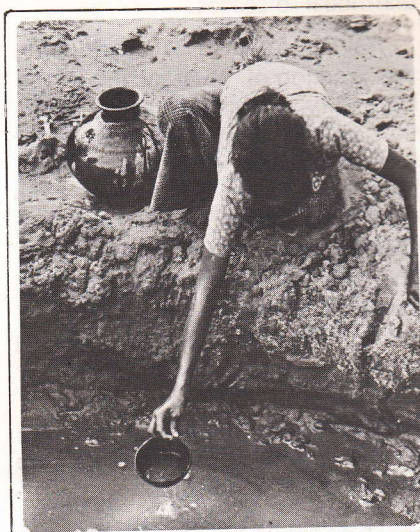
Dr. Andrew Fisher and
Dr. Harold Gustafson
University of California
Berkely, U.S.A.

A FISHERMEN'S COMMUNITY IN TEKNAF PROJECT

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wells were the main sources of water. In addition, in the recent past, the community was provided with four handpumps, but unfortunately, they are perpetually out of order, so the entire community must use the muddy and polluted water from ditches and dugwells. During the hot dry season, almost all the sources of water dry up, resulting in a shortage of sweet water.

The community has no sanitary education; they have the habit of indiscriminate defaecation. In 1977 the community was found to be full of scattered human faeces and rubbish. The lack of sanitary and other hygienic measures added to the crisis: the environment was entirely unhygienic. Almost all the children were malnourished (with heavy worm infestation). The community had high incidence



Left : The community people used ditches and dugwells as sources of drinking water
Right : Now the people use handpump water for drinking and other domestic purposes

of diarrhoeal illness and skin infections.

At the beginning of 1977, Jaliapara was selected as one of the study areas for the Water and Sanitary Intervention Programme of Teknaf Dysentery Project. Accordingly, the community has been provided with 28 more handpumps. The site of each handpump was selected so that no one has to walk more than a few paces to reach a handpump. These are maintained properly and regularly. The ditches and dugwells have been closed down by the community. Though at the beginning, the villagers complained about the taste of handpump water, presently they are accustomed to use handpump water for drinking and other domestic purposes. (This has reduced the incidence of diarrhoeal illness in Jaliapara and in 1978, during the cholera epidemic no case was isolated amongst the handpump water users).

For the safe containment of human faeces, 40 water sealed lat-

rine slabs have been installed. With the gradual rise in sanitary awareness of the villagers through regular and simple sanitary health education, it is expected that very soon, each family will have at least one latrine set and in the near future, Jaliapara will be a clean and healthy community.

INDIAN MICROBIOLOGIST VISITS ICDDR.B

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infection (Indian Council of Medical Research). This study showed that Shiga dysentery caused by multi drug resistant *Sh. shiga* is a major problem in the preschool children in Bangalore, India. In this age group, shigellosis accounted for 30% of all acute diarrhoea. *Sh. shiga* (*Sh. dysenteriae* type 1) was the predominant serotype (75% of all *Shigella* isolates) with 94% having the ACST resistance pattern during 1976 to 1978.

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