

of the 1:10,000 cadastral map, and from the topographical series which covers the central area at 1:2,500 and the surrounding area at 1:5,000 in about 100 sheets. The 1:10,000 cadastral maps provide much topographic information, including contours at 10 feet vertical interval, and similar maps of Eldoret, Kisumu, Kitale and Nakuru show the essential features of each town on one sheet. These and ten other towns are also mapped at either 1:5,000 or 1:2,500, but several sheets are required to cover each of the larger towns.

Useful sheets at 1:25,000 and 1:10,000 respectively show the site and form of Dar es Salaam and Tanga: but for most towns in Tanzania the only maps available are at 1:2,500. There is as yet no published map of Zanzibar town. Kampala has been mapped at 1:25,000, and this sheet, which covers the whole urban area including Mengo, is of much geographical interest. The area within the city boundary is also mapped at 1:10,000, and series at 1:5,000 and 1:2,500 cover the whole urban area in 32 sheets and 85 sheets respectively. Jinja, Mbale, Tororo and Entebbe are all covered by single, very useful, sheets at 1:10,000. These and twenty other towns are also mapped at 1:2,500, most being covered in between five and twenty sheets.

Conclusion.

A very wide range of topographical maps is available in East Africa, and although some parts of the region are as yet not adequately mapped, the coverage is much better than in many neighbouring countries. Most of the recent maps are extremely well produced, and many sheets should be of great interest to students and teachers in East Africa, and also to geographers elsewhere. Geographers in East Africa are indeed fortunate to have such a wealth of material available for their use.

NOTE:— Catalogues of maps available, with further details including prices, may be obtained from:—

The Public Map Office, P.O. Box 30089, Nairobi,
 The Survey Division, P.O. Box 9201, Dar es Salaam,
 The Map Sales Office, P.O. Box 361, Kampala.
 Messrs. Edward Stanford Ltd., 12-14 Long Acre, London W.C.2.

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STUDENT FIELDWORK AT A MOMBASA SCHOOL

Saintly geographers preach the virtues of local studies for which I, sinning, have ever found precious little school time. During my own H.S.C. pupilship one occasionally saintly teacher asked some of us each to carry out a local study, and I asked the same of the fifth form at Shimo la Tewa School, Mombasa, in 1965 with results that encourage me to continue the scheme. Although the standard may vary and even fall short, yet this work has appreciable value for the pupils and for their school.

The progress of the 1965 studies was accelerated by our entering nine of them in the Uganda Geographical Association's Essay Prize Competition, in

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which we were gratified by special mention for the combined effort and pleased that one of our essays won the prize. With the winner at the head of the list the nine studies submitted in the Competition were as follows: 'Influence of Mtwapa ferry and bridge on traffic, settlement and occupations', by Isaac Kavuu; 'Traditional fishing on Mtwapa creek', by Kiema Muthoka; 'Prospects of coast farming: the work of Mtwapa Agricultural Research Station', by John Mumba; 'Sources of Mombasa's vegetable market supplies', by John Masai; 'Origins and distribution of the East African oil refinery's supplies and products', by Benjamin Nzimbi; 'Distribution of electricity from the Kipevu power station,' by Thomson Tsumah; 'Source and distribution of cement from Bamburi' by Dick Otieno; 'Vipingo sisal estate,' by Bahola Godhana; and 'Decline of the dhow trade', by Kitheka Babu.

Pupils can best undertake this kind of work at the beginning of their fifth year, before H.S.C. examinations are really imminent, and it helps them to find their feet at the beginning of their advanced level course. Yet some persuasion is needed to effect a digression from examination preparation, and fortunately I can now suggest to future pupils gains made the more tangible by our 1965 experience. I can mention the possibility of showing these pieces of personal authorship to prospective employers or university selection officers; who knows but that a school study might not be the prototype of a later, better university thesis? I can forecast possibly rewarding contacts with affairs and notabilities normally beyond the reach of schoolboys; the 1965 researchers in some cases impressed government officials and industrial managers quite favourably, and this may be of help to them in their later quest for employment. I can promise the satisfaction of original research: how pleased were the 1965 group with their first attempts at authorship! I can hope for a better appreciation of textbook facts from the standpoint of those who have discovered some facts for themselves. I can emphasise that individual field studies are good training in methods of geographical inquiry, and hope that experience of this kind will bear fruit in the preparation for, and the writing of, subsequent examinations. The 1965 group were confronted with the influences of geology, topography, soils, climate, situation and communications upon local farming, fishing, industry, traffic, settlement and trade; and they used various techniques of survey, map making and map reading and cartographic methods of representing data. I can hope also for their better understanding of geography; the individual use of geographical techniques, and the application and interpretation of geographical principles, in relation to local features and affairs, may even in the case of some pupils have laid the foundation stone of a career in geographical research. There is profit also for the school: each year more local lore is accumulated for the geography teachers to impart. Avenues of information sometimes open up more readily to a local boy than to his immigrant teacher; and the school stands to gain from the influential contacts made on the pupils' behalf.

The findings of the 1965 group cannot be summarized here, but a few of the more outstanding results of their work may be mentioned. Future coast farming may well involve far greater emphasis on tree crops: not only the well known coconut, mango, cashew and citrus, but also the Bixa tree which thrives at the coast and provides a red pigment for lipstick. Sisal might, under mixed farming, share its territory with beef cattle, grazing between the sisal rows in the rains and utilising the succulent sisal waste in the dry seasons.

We could also envisage the spreading of the crossbred cattle from the herd now in its sixth successful year at Mtwapa where it has developed resistance to coast ills and gives high milk yields. Future herding methods might include the organized night grazing which is helping to stimulate higher yields at Mtwapa. The principles of settlement development have been revealed by the work of our prize-winning researcher, who has observed the decline of ribbon, crossroad and ferry point settlement on the Mtwapa ferry route, counterbalanced by growth on the route of the relatively new Mtwapa bridge. Some effects of Kenya's foreign trade links have been seen locally; sisal is no longer exported to South Africa, and coal, which used to be imported from South Africa to the Bamburi cement works, now comes from sources as far away as Vietnam and the U.S.A. Encouraging examples of the growth of industry in Kenya have been observed: how the oil refinery at Mombasa has built up a local skilled labour force, and how exports of cement have steadily increased to many destinations in the western Indian Ocean. On the other hand, the decline of the dhow trade is very clear; the competition of modern motor vessels, new consumer goods and new East African industries supplying old needs, the attraction of greater opportunities for employment in the oil-rich Persian Gulf states, and political uncertainty on the East African coast have all contributed towards the severe curtailment of dhow arrivals at Mombasa.

As well as examination pressure, which limits time and necessitates persuasion, there are other difficulties. There is the initial problem of finding sufficient local topics for every pupil each year. Beyond the more obvious studies others may be suggested by consulting well known textbooks covering East Africa and also East African periodicals. I have found that thumbing through the telephone directory has harvested a small crop of research institutions and business concerns to which attention might usefully be directed. As the school locality becomes exhausted the attention of fifth formers might be focussed upon their home areas during their vacation. In due course I hope to set pupils, either individually or in groups, to investigate or to revise a previous study of topics such as these: a geological feature, a water table studied through wells, erosional forms, evidence of changes of sea level or of the extent of a lake, the influence of altitude on flora and fauna, cloud types and patterns habitually observed off the coast or inland, individual agricultural, industrial or transport concerns, a routeway, a rural settlement pattern or the form of a rural or urban settlement.

A major difficulty is that virtually all the ideas, plans and stimuli must come initially from the teacher. Most pupils at this level are not sufficiently mature to think out research programmes, interview people profitably and make individual investigations. I have found it best to allocate topics to pupils according to their personal ability and to their other H.S.C. subject(s), so that they may benefit from the advice of other teachers; any fortuitous advantage, such as a relative well-placed within an industrial concern, may also be taken into account. Each pupil needs to be presented with a detailed plan of his research, including copious questionnaires to arm him for his interviews lest he waste the time of those who submit to his interrogation. In 1965 the willingness of those who were approached to give information was very encouraging; this, of course, obliges one to prepare carefully for interviews and ensure punctuality.

At the writing stage a great deal of guidance is needed as to the arrangement of text and illustrations. Even at fifth form level the text is likely to need a good deal of correction — more, for instance, than entry into the Essay Competition allowed me to make in 1965. I hope to find time to correct and edit a duplicated edition of the set of essays, a copy of which will be sent to each of the persons who helped. At the writing stage also there is need for coaxing to get the work finished before thoughts of examinations kill enthusiasm. In this respect the Uganda Geographical Association Essay Prize Competition is a boon; with a prize offered and a deadline set it provided a very useful stimulus for the 1965 group. Although the prize may never come to Shimo la Tewa again, we shall continue to submit our entries, and wish the Competition every success.

D.G. LEWIS.

RESEARCH NOTES

During the past year several geographical research projects of East African interest have reached completion, and many new ones have been started. Whilst many projects mentioned in previous issues of the *Review* continue, the present note aims primarily to draw attention to recently completed work and to recent and forthcoming publications.

In Uganda, work on several projects by members of the staff of the department of geography at Makerere University College has produced interesting results. Mr. B. W. Langlands has published a very useful *Bibliography on the distribution of disease in East Africa* (Makerere University College Library, 1965), and continues his bibliographical interests with a biannual *Uganda bibliography* which contains numerous references to material of geographical interest and is published in the *Uganda Journal*. Mr. Langlands has also published in the same journal a note on maize cultivation in Uganda from 1860 to 1920, and is preparing for publication similar notes on banana and cassava cultivation in Uganda. Mr. P. H. Temple has published a study of Nakasero market, Kampala, in the *Uganda Journal*, and, together with Mr. J. C. Doornkamp, a study of 'Surface, drainage and tectonic instability in part of south-west Uganda' in the *Geographical Journal*. Mr. Temple has also been involved in an interdisciplinary research project on Lolui Island in Lake Victoria and is to edit a book setting out the results of the project. Mr. B. S. Hoyle has completed his doctoral research on the seaports of East Africa, and it is hoped that this will be published by the East African Publishing House, Nairobi (for the E.A.I.S.R.) towards the end of 1966. Dr. A. M. O'Connor has written *An economic geography of East Africa* which should also be published in late 1966 by Bell in their new series of Advanced Economic Geographies.

An increasing interest in medical geography is being shown in the Makerere Medical School; Miss Paula Cook, an Oxford geographer with a training as a medical statistician is to undertake there a study of the distribution of cancer of the oesophagus in Uganda. Mr. R. Baker, a candidate for the M.A. degree in African studies at Makerere, is making a comparative study of four government ranching schemes in Uganda and is also preparing a paper on 'Spain in modern