if not trivial.   For example, many present false proofs and the reader is challenged to find the fallacies.

Professor Steinhaus is not concerned with such amusements. His snapshots deal with straightforward excerpts culled from various parts of elementary mathematics.   The excerpts involve themes of sound mathematics which are not commonly found in texts or popular books.   Many have application to real problems, and Steinhaus presents these applications.   The great merit of his topics is that they are astonishing, intriguing and delightful.   The variety of themes is large.   Included are unusual constructions, games which involve significant mathematics, clever reasoning about triangles, squares, polyhedra, and circles, and other very novel topics.   All of these are independent so that one can concentrate on those that attract one most.   All are interesting and even engrossing.

Professor Steinhaus explains the mathematics and his fine figures and excellent photographs are immensely helpful in understanding what he has presented.   He does raise some questions the answers to which may be within the scope of most readers but the reader is warned that some answers have thus far eluded the efforts of the greatest mathematicians.   Mathematical proof demands more than intuition, inference based on special cases, or visual evidence.

This book should be and can be read by laymen interested in the surprises and challenges basic mathematics has to offer. Professor Steinhaus is mathematically distinguished, and, as evidenced by the very fact that he has undertaken to present unusual, though elementary, features, is seriously concerned with the spread of mathematical knowledge.   The careful reader will derive pleasure from the material and at the same time learn some sound mathematics, which is as relevant today as when the original Polish edition was published in 1938.

PROBLEMS

First the solutions to some previous problems.

1.   A car park has spaces numbered $1, 2, \ldots, n$.   Any driver arriving with a ticket for space k parks at space k unless it is occupied, in which case he chooses the first vacant space from $k+1, k+2, \ldots, n$. If these are occupied he leaves in disgust.

If n drivers arrive in turn, each with a ticket bearing a randomly chosen integer between 1 and n, prove that they can all park with probability $(n+1)^{n-1}/n^n$.

This problem appeared in Vol. 1, No. 1, of the Mathematical Intelligencer and the solution appeared in the next issue. Briefly, the idea is to consider a modified problem in which the tickets bear randomly chosen integers between 1 and $n+1$, and in which the car park has $n+1$ spaces and is circular.   The n drivers are able to park (since they can go round again) and there is always one space left at the end.   The answer to the original problem is then clear because:

(i) a successful outcome in the original problem corresponds to an outcome in the modified problem in which the space $n+1$ is left vacant, and

(ii) in the modified problem there are $(n+1)^n$ sample points, exactly the same number of which leave any given space vacant (why?).

2.   Ship A is moving due east at constant speed and, at a certain moment, ship B is moving due north at the same speed towards A.   If B maintains this speed but continuously alters course towards A how closely can B approach A?

Let both ships have speed v and begin at a distance of d miles.   Make the construction indicated in Fig. 1 overleaf.
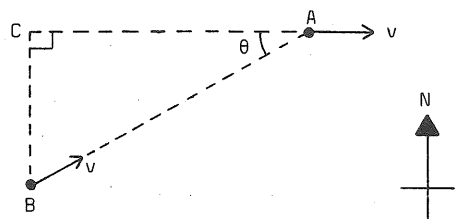
FIGURE 1: Typical Position

Then the distance AB is increasing with speed $v \cos \theta - v$ (so it is decreasing) and the distance AC is increasing with speed $v - v \cos \theta$. Thus the distance AB+AC is constant, and so the distance AB tends to $\frac{1}{2}d$ in the limit.

Now for a problem which can be solved very elegantly by thinking laterally (quite literally).

1.   The Plank Problem.   Does there exist a positive integer n such that a closed disc of diameter 1 can be covered by fewer than n planks of width $\frac{1}{n}$?

A plank is defined to be a parallel strip which is closed and of infinite length.

2.   The Planet Problem.   A finite number of equal spherical planets are in outer space.   A region on the surface of one of the planets is called hidden if it is invisible from any of the other planets.   Find the total area of the hidden regions.

This problem came from a Russian Olympiad.

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CONFERENCE REPORTS

IRISH MECHANICS GROUP CONFERENCE ON DEVELOPMENTS IN MECHANICS

Several years ago, those working in Mechanics in Ireland felt the need for an informal Association which could provide more definite contact through periodic meetings.   From this need, the Irish Mechanics Group was initiated with the object- ive of organising short, usually one-day, meetings once or twice each year.   The general format of such meetings aimed at enabling Mechanicians to present brief talks (usually of thirty minutes duration) on their current areas of research as well as affording them an opportunity to meet and exchange views informally but on a regular basis.   On occasion, some more formal meetings, having specific themes and areas of res- earch have been organised.   In order to maintain the desirable informality of the meetings, Proceedings are not published.

The meetings/conferences are held in different locations usually shortly before or soon after the end of University or Technical College term.   Attendance, which tends to number around thirty, usually includes personnel from the Institutes of Higher Education, Universities, Colleges of Technology, and various research institutes including representation from the Meteorological Office, An Foras Forbartha etc.

For a number of reasons meetings of the Irish Mechanics Group (I.M.G.) had not been held for a few years up to June of this year.   A two-day I.M.G. conference on "Developments in Mechanics", sponsored by the Mathematical Physics Department was held in University College Cork on 2/3 June last.   The attendance of some thirty Mechanicians included representation from the N.U.I. Colleges, Trinity College, Queen's University, N.I.H.E. Limerick, N.I.H.E. Dublin and some of the R.T.Cs.

The Conference Chairman - Professor P.M. Quinlan, U.C.C., in his opening address stressed both the 'healthiness' of mech-