THEY WANT TO MOVE GREENWICH

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SO familiar has Greenwich Mean Time become, and so important is the Greenwich astronomical work to navigation throughout the world, that any suggestion of a change in the system is a startling proposal.

Greenwich Time was given legal status in 1880—that is, a Bill was passed enacting that the word *time*, when it appears in legal documents relating to Great Britain, shall be interpreted as the Mean Time of the Greenwich meridian. Such a definition might assume great importance in (say) legal actions relating to contracts.

Greenwich Mean Time has also entered fully into British home life during the last 15 years, for it is broadcast over the radio several times each day. Even more important is the way Greenwich Observatory assists shipping. The station was indeed originally established to assist navigators. It was founded to provide reliable lunar tables, so that longitude could be accurately determined at sea. Those tables assisted Britain to become the world's leading sea power.

Today, the annually-published volume of Greenwich lunar tables (the *Nautical Almanac*) is used widely not only by British sailors but also by foreign ones. It is not too much to say that the prolonged Battle of the Atlantic has been favourably affected for the Allies by those same tables; they have enabled accurate courses to be charted and followed, between the New World and Great Britain, along routes that have outwitted the Nazi U-boats.

Any but very minor alterations to Greenwich Observatory might therefore be regarded (with justification) as something akin to heresy! Nevertheless, many experts consider that London's long-famous astronomical station has outlived its day—or, more correctly, that conditions have combined to reduce its effectiveness, decrease its efficiency, and make it unduly costly in upkeep.

This Government enterprise (its full title is the *Royal* Observatory, Greenwich) costs approximately £20,000 a year to maintain, and there is a growing weight of opinion that the activities might be carried out much more [illegible]

Several new sites have in fact already been suggested and inspected, and though the War has necessarily suspended the project, there is little doubt that the Greenwich astronomical centre will never attain its tri-centenary, which falls in 1975.

Pollution of the London air is the chief reason. In these days of legislation and other far-reaching efforts to keep the atmosphere of Britain's cities free from smoke, it is somewhat surprising to discover that the Greenwich neighbourhood has in this respect seen a marked change for the worse!

Time was—and within relatively recent years—when Kew gardens, the well-known London botanical centre, had considerably less sunshine than Greenwich. Today, the reverse applies. As recently as the period of the last World War, Greenwich Observatory sunshine records showed a yearly average of more than 65 hours excess over Kew. Today, Kew has about 150 hours a year more sunshine than Greenwich!

The expansion of London, with a consequently thicker and more widely spread smoke pall, is the main cause of this remarkable change in the fortunes of Greenwich. The effect upon astronomical observations will be readily apparent.

The percentage of "Z" days (smoke-haze days) having so greatly increased, visual work has been much handicapped. And upon such visual operations depends much of the most important work performed at Greenwich. Meridianal observations, performed to provide nautical tables, depend upon measurements taken from stars low in the sky. Yet during the last few years, even to find those stars has been a difficulty to Greenwich astronomers.

Photographic work has been similarly affected, longer exposures being necessary. This means that less work can be performed in a given time. Scientific observations based upon the light strength of the stars are also being conducted under increasing difficulties.

Still another factor is the damage caused to delicate instruments by smoke-polluted and grit-laden air. Highly-polished mirrors require recoating and re-polishing far more frequently. The bearings of finely-balanced instruments require to be often reground.

There are other drawbacks, such as (in peacetime) night glare from the City, which further hinder observations, and all these factors combine to indicate that Greenwich Observatory

bly it might be retained as an historic relic. But there can be no doubt that it must shortly be superseded by another station, on a more suitable site.

The nucleus of the present building was designed for Charles the Second by Christopher Wren, in 1675, and was in use a year later. Wren himself was very proud of this creation, for he told Bishop Fell of Oxford that it was "built a little for pomp." But that it has served its purpose well, up to recent years, is very evident, too.

Some of the most interesting discoveries about the heavens have been made at Greenwich during its two-and-a-half centuries as an astronomical centre. It was there that the first Astronomer Royal, John Flamsteed, was installed (much to his delight) in 1676, and the discoveries which he made during the next few years are recorded in his *Historia Celestis Britannica*, a three-volume work which advanced the science of astronomy very considerably.

In that work, the first record of the discovery of the planet Uranus is to be found, though Flamsteed himself never realised the importance of this note. The identity of the planet in his records did not come to light until later scientists worked backwards with their astronomical tables. It was after Flamstead's death that they proved his discovery to be actually Uranus.

Edmund Halley, after whom the well-known Comet is named, succeeded Flamsteed, but there have been only about a dozen holders of the post during the two-and-a-half centuries since the position of Astronomer Royal was established by the Merry Monarch.

In its early days, the Observatory laboured under difficulties, as it does to-day, but they were of a different kind. The astronomers were handicapped by difficulties in the manufacture of glass for their lenses. Another trouble in this respect was the heavy excise duty levied on the material—a tax which was not removed even for this Government enterprise, and which remained until less than 100 years ago!

The salary of the Astronomer Royal was at first only £100 a year, and Flamsteed was obliged to augment his income by taking up a teaching post. He also bought several instruments for the observatory himself. Today, the Astronomer Royal is paid up to £1,500 a year, the job is a full-time one, and all the necessary instruments are provided by Government funds.

the work carried out there has enormously increased. In addition to meridianal observations and other astronomical research, meteorology for weather-forecasting purposes is undertaken at this station.

It is in the matter of Time, however, that Greenwich is perhaps best-known to the general public now. Actually, this Time Signal work is by no means a product of radio developments. The Greenwich system of Standard Time has been generally recognised throughout the world since 1883.

Even the Nazis have paid tribute to the Greenwich astronomers and scientists. The German radio has announced that Greenwich Mean Time is to be abolished after the War, and that the Berlin observatory will henceforth become the world's foremost time-keeping centre.

It does not need to be pointed out here that making such an extravagant claim is tantamount to counting one's chickens befor they are hatched!