

THE PRIMUS BURNER.

By J. WALLACE, C.E.

IT would be very interesting to know what proportion of people who buy primus burners really take the trouble to know all about them and to see that their servants understand them properly. A new burner in good order when lighted is a joy to look at. It is so clean and the combustion is so complete that there is no escape of unburnt carbon and no smell at all. On the other hand, a primus burner out of order is a stinking horror, for kerosene when badly burnt is the most smelly of all fuels, and ruinous to delicate foods. The instructions supplied to purchasers of this burner are not always understood by them. They seem to have been written by experts for well-informed people. This is assuming too much. If, on the other hand, the writer went carefully into all details he would probably be found tiresome by many readers. Still it is no use trying to get the best out of a primus burner unless you know what you are about.

The first thing to know is that the primus has no caprices; if it burns badly there is a good reason for it even if you cannot find it out. The reasons for bad burning are fortunately not very many.

The purpose of the burner is, first, to turn kerosene into gas and then to burn the gas with a proper supply of air. Kerosene in liquid form will not burn at all: it must first be evaporated by the application of heat. Alcohol is just in a cup below the burner that is a retort, and the alcohol flame heats the burner until when the oil is pumped up it flashes into gas and escapes at the jet where it takes fire from the alcohol flame. If there is not enough of spirit in the cup the retort will not be hot enough, and the oil, when pumped up, will escape in burning spray that is, at least, most disagreeable. If a draught of air disturbs the alcohol flame it may not heat the retort sufficiently, and the same thing will occur, or if pumping is started too soon you will have a similar result. But if the retort is properly heated and the burner jet is clean there will be no misfire. The needle used for cleaning the burner jet should not be allowed to rust else it may stick and break in the hole, and if a new jet is not at hand and a tool for placing it, work is stopped. Pump leathers are rarely renewed when worn, and endless pumping is the result when a few strokes would suffice. Again the filling cap washer is allowed to become leaky resulting in loss of pressure and more pumping. Only fill the tank half full else there is no room for the air cushion that forces the oil up to the burner and frequent pumping becomes necessary. All the care and attention bestowed on a primus burner is well repaid by its satisfactory working. Few people know all the uses to which this burner may be applied. It will melt metals, heat a hot air bath, serve in the laboratory, heat soldering tools, dry clothing on a cage, bake bread and confectionery. The ease with which the heat can be increased or diminished makes not only for economy but facilitates many operations that are more difficult when performed over a fire.

Any quality of kerosene will burn in a primus burner provided it is free from solid particles of dirt, but as in time a deposit of carbon will accumulate in the retort the cheap oil will deposit more rapidly than the dear. The remedy for "carbon" is to force air through the retort while it is red hot. This is sometimes done with the aid of a second burner for heating the retort. The pump is kept going slowly to give the air supply. The oil vessel is of course empty on this occasion. The primus should not be used in a draughty place and very large vessels should not be placed over it as smoking will be caused by the accumulation of burnt air. A primus is rarely so worn as to be past repair, spare pieces are obtainable from the dealers. A spare pump leather and feeding cap washer should always be on hand. There are many primus burners in use to-day that are twenty years old.

THE PASSION PLAY AT OBER-AMMERGAU.

IT was in 1910 that I saw the Passion Play; and if I am to write of it as it appeared to me then, I must think myself back into those pre-war days and not stop to wonder what part the poor little peaceful Ober-Ammergau may be playing now. My wish for it is that in 1920 it may be able to continue its fulfilment of the old vow in virtue of which the wonderful drama has been represented every ten years, since the time, in the middle of the 17th century, when the village made its thanksgiving for deliverance from a devastating plague.

When people wonder whether there can be any reverence or any devotion left to a ceremony so much advertised, and so beset with tourists, the only answer is, "Go and see." If we may conclude from the evidence of our senses that there is reverence in the most solemn Service of the Church, then there is reverence in the Ober-Ammergau Passion Play.

We arrived at the village on a Saturday morning, having travelled by what was then a very new little end-of-the-world railway, from Munich, through country of which we saw nothing at that time but two straight hedges, bedecked with dewy cobwebs glistening through the mist. At the tiny shed which does duty as a station our luggage was taken from us by a porter, dressed in the usual uniform, but remarkable to us by reason of the long straight hair which streamed down his back. Afterwards we learnt to recognise the performers in the Play by this characteristic. The men and boys with their fair flowing locks form a distinct feature of the village.

We followed this man to the house of Hubert Zincke, where we were to lodge. As we went he volunteered the information that Hubert was an *Angel*. This rather staggered us for a moment, as we had not yet become accustomed to the complete obsession of the village by the Play.

The beautiful little cottage to which he led us was spotlessly clean, inside and out; and though we were rather a tight fit, Hubert arranged it for us on condition that we should not afterwards complain of our quarters.