Castor oil is deservedly a favorite among tug runners, though its cost is high compared to that of a medium grade engine oil. There is a great difference of opinion regarding the respective merits of castor and mineral oil for tug engines, but trials have shown the former to be more satisfactory and its use is now general on the tug boats of the fleet.

Referring to the table of lubricants used during last season, it will be remarked that the consumption of tallow was large. In explanation of this, however, the writer wishes to state that unfortunately a quantity of very low grade cylinder oil had been purchased and to render it fit for use a large proportion of tallow had to be added. The injurious effect of tallow upon a steam engine is too well known to require comment, but unless carefully watched the average tug engineer will use it, the amount used generally depending upon how much is given him. The judicious use of properly prepared graphite with cylinder oil is to be recommended.

There is no doubt whatever that a dredge equipped only with sight feed lubricators wastes much cylinder oil. The actual work of the machinery is more or less intermittant and unless the engineer shuts off the supply, oil will continue to flow into the cylinders after the engine has stopped. As there are usually several engines on a dredge, this source of waste becomes a serious matter if economy of working is to be considered. Mechanically operated oil pumps were experimented with last season and they proved so satisfactory that they are to be fitted to all the engines of the entire fleet. Being actuated by the engine itself, they feed only when the engine is running. They are positive in their action, and if of correct design, require little or no attention beyond filling. It is claimed by some engineers that this type of lubricator will clog if graphite is used with the oil, but the writer has experienced no trouble in this direction even when using a mixture composed of one part of Dixon's Flake Graphite to eight of oil.

The subject of the durability of wire ropes is full of interest to any one concerned in the efficient and steady operation of a dredging fleet.

In nearly every case, the design of a dredge or floating derrick will not allow of the correct diameter of sheave being used for any particular wire. Take spud wires as an example. The spuds of a dredge are 36″ square, and as it is necessary that the cable lie close to the sides of the spuds, the diameter of the sheaves cannot be much greater than 36″ on the tread. If, for this purpose, we use a two inch wire composed of wires 0.1 inches diameter, we find that the stress induced by the bending alone amounts to 83,000 lbs. per square inch, which is far too high for durability. Again in the case of a dredge hoisting wire, a two and a quarter inch cable composed of