

MACLAINE'S TWIN SCREW PROPELLERS.

The "perfect" twin propellers are being introduced by the Perfect Piston Company, of Belfast. The object of the inventor was to produce a system of propulsion which should be advantageously applicable to all sizes of vessels, and calculated to materially increase the safety and economy of maritime trading. The system is illustrated in the annexed engravings, where Fig. 1 shows an end elevation of the stern of a vessel fitted with Mr. MacLaine's twin screws, Fig. 2 being an underside view, and Fig. 3 a side elevation of the stern. These views are engraved from photographs of the model of a steamship 500 feet long and 50 feet beam, with a load draught of 26 feet. The twin screws are each 19 feet in diameter, overlapped 5 feet, and 11 feet apart fore and aft, and the ends of the blades project through two separate propeller spaces, each 6 feet by 16 feet, with a solid 4 feet space between them.

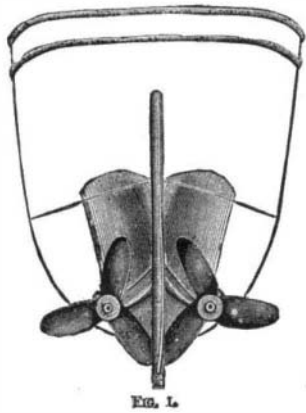


FIG. 1.

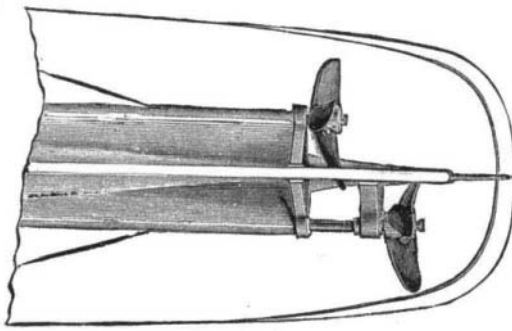


FIG. 2.

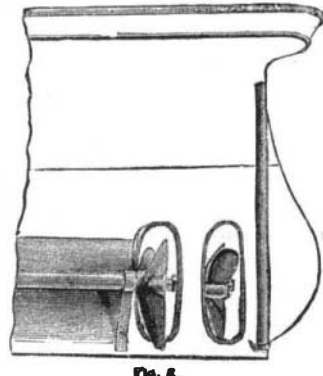


FIG. 3.

IMPROVED TWIN SCREW PROPELLERS.

By increasing the diameter of the propellers, together with overlapping them 5 feet and going forward 16 feet, the propeller shafting outside the hull becomes so shortened, and is brought so much nearer the center line, that it can be readily built into the vessel, and the stern tubes on both sides finished watertight up to forward propeller space, one shaft being continued aft to carry the after propeller, and besecured on a bracket placed on the solid 4 feet space between the apertures. The general result is that the propellers are so far distant fore and aft that the tips do not interfere with each other in their working, and the solid 4 feet space retains the body of the water from the forward propeller on its own side of the vessel, and prevents it interfering with the working of the other.

The propeller width is materially reduced, which facilitates docking; all brackets that might be damaged by floating ice are dispensed with, and all the dangers and difficulties of twin screw propulsion are avoided. In small vessels the propellers can be kept a few feet apart fore and aft, and the propeller spaces made merely sufficient to permit the tips of the blades to project through them, thereby enabling the diameters of the propellers to be enlarged to increase their efficiency. The system would appear to be well suited for tug boats, where it is desirable to have propellers of large diameter, with ample surface without extreme width over the propellers. In short, it possesses many advantages, and we hope soon to be able to report its practical application and the results of its working, which we hardly doubt will prove satisfactory.—Iron.

THE AMERICAN DICENTRAS.

This genus, which comprises about a dozen species, is chiefly confined to America; with us all the species are more or less hardy, and their foliage being graceful and almost unique, they have a fine appearance in borders and on rockeries. *D. formosa* eximia and the Chinese *D. spectabilis* might easily be naturalized on the margins of our woodland walks, perfect drainage being really the only essential toward their thorough establishment; thus used, they would fill up a gap between the daffodils and bluebells.

D. canadensis (Squirrel Corn), though by no means common as yet in gardens, lacks none of the grace and beauty so characteristic of the allied species. It was at first believed to be only a form of *D. eximia*, which it resembles, but it is abundantly distinct, both in the color of its flowers and in the formation of its root stock; the scales, taking the form of grain, look not unlike yellow Indian corn. It is a valuable addition to the bog bed, where it succeeds well, provided it has a good rich soil and moisture during the growing season. The situation, though not exposed, should not be too shady, as this tends to the growth of leaves instead of flowers. The leaves, which are finely cut, are quite fern like. The flowers, which are borne raceme fashion, are nearly heart-shaped, and have short spurs; in color they are white or greenish-white, tinted with rose, and have a strong hyacinth fragrance. They are produced in April and May. It is found in woods from Maine to Kentucky.

D. chrysantha, figured in the "Flore des Serres," viii., 1,931, under the name of *Capnorchis chrysantha*,

is an extremely handsome plant—indeed one of the most remarkable introductions of recent years in the way of herbaceous plants. Unfortunately, it gets disabled and even entirely destroyed in severe winters in the more northern parts of the kingdom. In the south, although it winters well in the open generally, it is all the better for the protection afforded by evergreen

bushes, where, dotted about at intervals, it forms a striking feature; its large pyramidal spikes, rising up golden rod like, have a unique effect. It requires a light, rich soil, well drained, and the crowns should be well under the surface; a few large stones on each side of it greatly assist in giving the roots the desired warmth in spring. Where it does well it generally attains such dimensions that other plants get overcrowded by it. Plants of it raised from seed flower the second year; they may be kept through the first winter in pots, or when ready to handle they may be planted out where they are to bloom. Give it a slight protection during severe weather, and transplanting, except from pots if it can be avoided, had better not be attempted, as the result is oftener than otherwise a failure. It grows from 2 feet to 4 feet and even 6 feet high; the leaves are doubly pinnated, and the larger ones are



DUTCHMAN'S BREECHES (DICENTRA CUCULLARIA).

over a foot long; they are pale or glaucous green, and are very pretty. The flowers, which are bright golden yellow, are about an inch long, and have beautifully curved or cordate bases. It commences to flower about the end of July, and continues into September. It is found on hills from Lake Co to San Diego, in California.

D. cucullaria (Dutchman's Breeches, or Hooded Fumitory), of which an illustration is here given, although oftener classed among curious and interesting plants rather than among those that are useful, is not to be despised when well grown as a rockery subject. Our experience with this plant has been varied; a half

shady nook in pure peat seems to be the situation in which it feels most at home. It will be rarely found to do well in the open border without some protection; its slender leaves are invariably cut and destroyed by cold east winds early in spring. The scapes rise from a sort of granulated bulb, and bear from four to a dozen curiously hooded flowers, white, and invariably tipped with cream or pale yellow; the leaves, which have a glaucous green hue, are very delicate and pretty in outline. It flowers in April and May, and is a native of North America.

D. eximia.—This is a very ornamental plant, suitable for a small rockery, where its graceful, fern-like foliage never fails to attract attention, even without its handsome flowers. It will grow in almost any position, and in ordinary garden soil as well as in a peat bog. It makes a pretty clump in the mixed border, and, although liable to spread beyond bounds, a few pieces of slate will keep it in its place. It has a tendency, especially on the rockery, to run to the stones, leaving a blank in the center of the clump; this is, however, easily remedied by transplanting from the sides, which may be done in autumn without injury to the plant. The finely-cut divisions of the leaves are broadly oblong in outline, and glaucous if grown in full sun. The flowers, which are borne in clusters on compound racemes, are oblong in shape, with the crest of the inner petals slightly exserted; they are borne on stalks about a foot high. They are bright or deep rosy pink, and last from May until August. It is a native of the Alleghanies of Virginia.

D. formosa.—This plant is nearly related to the above, perhaps too near to bear a distinct specific name; the chief difference lies in its being dwarfer, and in having lighter colored flowers, and in its having a two instead of a four-angled stigma, as in *eximia*. *D. formosa* is easily managed, and may be grown with advantage in sheltered spots on the rockery. It makes a fine pot plant for edging stages, etc. It is a native of Sierra Nevada, where it is found at elevations of 3,000 feet. It flowers from May to July, the flowers appearing rather later than the leaves.

D. pauciflora.—This is a very slender species, not yet introduced. Its leaves are biternate, and have very narrow segments. The flowers are pure white, tinged with rose at the tips.

D. uniflora is a salmon colored species. Both are natives of California.—K., in *The Garden*.

Remarkable Salt Deposits.

At a recent meeting of the Royal Geographical Society, Sir Peter Lumsden read a paper on the countries and tribes he has recently visited west of Afghanistan. He gave an interesting description of the geography of the Murghab Valley and the customs of its people, and quoted a singular account of the Numaksar, or salt lakes of Yar-o-lan, visited and described by Captain Yate. He said: "The valley of the lake from which the Tekke Turkomans from Merve get their salt is some six miles square, and is surrounded on all sides by a steep, almost precipitous descent, impassable for baggage animals, so far as I am aware, except by the Merve road, in the northeast corner. The level of the lake I made to be about 1,430 feet above sea level, which gives it a descent of some 400 feet from the level of the connecting ridge, and of some 950 feet below the general plateau above. The lake itself lies in the center of the basin above described, and the supply of salt in it is apparently unlimited. The bed of the lake is one solid mass of hard salt, perfectly level, and covered by only one inch or two of water. To ride over it was like riding over ice or cement; the bottom was covered with a slight sedi-