Three new diatom species are described under the new genus *Tropidosiphonus*, separable from those hitherto assigned to *Mediaria* Sheshukova-Poretskaja, which should now recur to the araphid category based on the lack of raphe system. They are *Tropidosiphonus lanceolatus*, *T. secundus* and *T. tenuiconstrictus*, all of which share a common appearance, bearing otherwise tubular endings. These internal tubes, termed helictosiphon characteristic of the new genus, is introduced from the evidence of SEM details as a new componental organelle of raphe system.

Key index words