

Table S1. Sequences used for the constrained phylogeny of *Halamphora ghanensis* in the Gouloué river, near Passamainty city (Poll7). Underlined accession numbers were deposited in the framework of this study. TCC (Thonon Culture Collection) numbers are given.

Accession number (Genbank)	taxon name	TCC number
<u>KY661535</u>	<i>Halamphora ghanensis</i>	TCC956
<u>KY661536</u>	<i>Halamphora ghanensis</i>	TCC956
KT023600	<i>Amphora subtro-pica</i>	
AM710424	<i>Halamphora nor-manii</i>	
AM710425	<i>Amphora libyca</i>	
AM710426	<i>Amphora pediculus</i>	
AM710489	<i>Amphora fogediana</i>	
AM710511	<i>Amphora</i> sp.	
FJ002103	<i>Halamphora cof-feaeformis</i>	
HQ912403	<i>Amphora pediculus</i>	
HQ912466	<i>Halamphora cof-feaeformis</i>	
KC954575	<i>Amphora pediculus</i>	
KC954577	<i>Amphora ovalis</i>	
KM084926	<i>Amphora ovalis</i>	
KM084927	<i>Amphora ovalis</i>	
KM084928	<i>Amphora ovalis</i>	
KM084932	<i>Amphora</i> cf. <i>pedi-culus</i>	
KM084933	<i>Amphora pediculus</i>	
KM084934	<i>Amphora</i> cf. <i>pedi-culus</i>	
KM084978	<i>Amphora ovalis</i>	
KM084979	<i>Amphora</i> aff. <i>ato-moides</i>	
KM084982	<i>Amphora bero-linensis</i>	
KM084993	<i>Amphora ovalis</i>	
KP229546	<i>Amphora aliformis</i>	
KP229547	<i>Amphora commu-tata</i>	
KC736590	<i>Halamphora mon-tana</i>	TCC477
<u>KY661537</u>	<i>Halamphora mon-tana</i>	TCC479
KT072943	<i>Amphora pediculus</i>	TCC702

Table S1 Cont.

KJ463458	<i>Amphora caribaea</i>
KJ463462	<i>Amphora hyalina</i>
KJ463471	<i>Amphora semperpalorum</i>
KJ463475	<i>Amphora subtropica</i>
KJ463478	<i>Halamphora coffeaeformis</i>
KJ463480	<i>Halamphora coloradiana</i>
KJ463481	<i>Halamphora oligotraphenta</i>
KJ463482	<i>Halamphora veneta</i>
KJ463483	<i>Halamphora</i> cf. <i>veneta</i>
KP400296	<i>Halamphora</i> sp.
KP400297	<i>Halamphora</i> sp.

Table S2. Sequences used for the phylogeny of *Gomphonema clavatuloides* in the Songaro Mbili river near Dembeni city (Poll29). TCC (Thon Culture Collection) numbers are given.

Accession number	taxon name	TCC number
<u>KY661538</u>	<i>Gomphonema clavatuloides</i>	TCC955
<u>KY661539</u>	<i>Gomphonema clavatuloides</i>	TCC955
<u>KY661540</u>	<i>Gomphonema clavatuloides</i>	TCC955
<u>KY661541</u>	<i>Gomphonema clavatuloides</i>	TCC955
<u>KY661542</u>	<i>Gomphonema clavatuloides</i>	TCC955
<u>KY661543</u>	<i>Gomphonema clavatuloides</i>	TCC955
<u>KY661544</u>	<i>Gomphonema clavatuloides</i>	TCC955
<u>KY661545</u>	<i>Gomphonema clavatuloides</i>	TCC955
<u>KY661546</u>	<i>Gomphonema clavatuloides</i>	TCC955
<u>KY661547</u>	<i>Gomphonema clavatuloides</i>	TCC955
KJ011853	<i>Gomphonema acuminatum</i>	
KJ011835	<i>Gomphonema angustatum</i>	
<u>KY661570</u>	<i>Gomphonema parvulum</i>	TCC478
KT072915	<i>Gomphonema parvulum</i>	TCC500
KC736598	<i>Gomphonema clevei</i>	TCC507
KT072918	<i>Gomphonema affine</i> var. <i>affine</i>	TCC526
<u>KY661548</u>	<i>Gomphonema acuminatum</i> var. <i>coronatum</i>	TCC680
KT072949	<i>Gomphonema acuminatum</i>	TCC737
KT072951	<i>Gomphonema clevei</i>	TCC811
AY571751	<i>Gomphonema capitatum</i>	
HQ912472	<i>Gomphonema affine</i>	
KJ011833	<i>Gomphonema affine</i>	
KJ011834	<i>Gomphonema affine</i>	
KJ011837	<i>Gomphonema carolinense</i>	
KJ011838	<i>Gomphonema dichotomum</i>	
KJ011839	<i>Gomphonema gracile</i>	

Table S2 Cont.

KJ011840	<i>Gomphonema intricatum</i>
KJ011841	<i>Gomphonema intricatum</i> var. <i>vibrio</i>
KJ011848	<i>Gomphonema subclavatum</i> var. <i>commutatum</i>
KJ011849	<i>Gomphonema subclavatum</i> var. <i>mexicanum</i>

Table S3. Sequences used for the phylogeny of *Epithemia hirudiniiformis* in the Soulou waterfall. TCC (Thonon Culture Collection) numbers are given.

Accession number	taxon name	TCC number
KT072944	<i>Surirella minuta</i>	TCC711
<u>KY661549</u>	<i>Epithemia hirudiniiformis</i>	TCC954
<u>KY661550</u>	<i>Epithemia hirudiniiformis</i>	TCC954
<u>KY661551</u>	<i>Epithemia hirudiniiformis</i>	TCC954
<u>KY661552</u>	<i>Epithemia hirudiniiformis</i>	TCC954
<u>KY661553</u>	<i>Epithemia hirudiniiformis</i>	TCC954
HQ912402	<i>Stenopterobia curvula</i>	
HQ912401	<i>Surirella splendida</i>	
HQ912400	<i>Surirella cf. fastuosa</i>	
HQ912399	<i>Campylodiscus sp.</i>	
HQ912398	<i>Campylodiscus clypeus</i>	
HQ912522	<i>Surirella minuta</i>	
AB430693	<i>Campylodiscus thuretii</i>	
JX032949	<i>Surirella costata</i>	
JX032950	<i>Campylodiscus hibernicus</i>	
JX032951	<i>Campylodiscus marginatus</i>	
JX032952	<i>Campylodiscus marginatus</i>	
JX032953	<i>Campylodiscus marginatus</i>	
JX032954	<i>Campylodiscus marginatus</i>	
JX032955	<i>Surirella helissella</i>	
JX032956	<i>Surirella iconella</i>	
JX032957	<i>Campylodiscus striatus</i>	
JX032958	<i>Campylodiscus levanderi</i>	
JX032959	<i>Surirella lineopunctata</i>	
JX032960	<i>Surirella sp.</i>	
JX032961	<i>Surirella sp.</i>	
JX032962	<i>Campylodiscus hibernicus</i>	
JX032963	<i>Surirella imbuta</i>	
JX032964	<i>Surirella spiralis</i>	
JX032965	<i>Surirella splendida</i>	
JX032966	<i>Surirella capronii</i>	

Table S3 Cont.

JX032967	<i>Surirella</i> sp.
JX032968	<i>Surirella</i> sp.
JX032969	<i>Campylodiscus</i> cf. <i>hibernicus</i>
JX032970	<i>Surirella</i> <i>splendida</i>
JX032971	<i>Surirella</i> <i>splendida</i>
JX032972	<i>Surirella</i> <i>linearis</i> var. <i>helvetica</i>
JX032973	<i>Surirella</i> <i>linearis</i> var. <i>helvetica</i>
JX032974	<i>Surirella</i> sp.
JX032975	<i>Surirella</i> <i>splendida</i>
JX032976	<i>Surirella</i> sp.
JX032977	<i>Surirella</i> sp.
JX032978	<i>Campylodiscus</i> cf. <i>hibernicus</i>
JX032979	<i>Surirella</i> cf. <i>bifrons</i>
JX032980	<i>Campylodiscus</i> cf. <i>hibernicus</i>
JX032981	<i>Surirella</i> <i>splendida</i>
JX032982	<i>Surirella</i> <i>splendida</i>
JX032983	<i>Surirella</i> <i>linearis</i> var. <i>helvetica</i>
JX032984	<i>Surirella</i> sp.
JX032985	<i>Surirella</i> cf. <i>bifrons</i>
JX032986	<i>Campylodiscus</i> <i>hibernicus</i>
JX032987	<i>Surirella</i> <i>splendida</i>
JX032988	<i>Surirella</i> cf. <i>bifrons</i>
JX032989	<i>Surirella</i> cf. <i>bifrons</i>
JX032990	<i>Surirella</i> <i>splendida</i>
JX032991	<i>Surirella</i> sp.
JX032992	<i>Surirella</i> sp.
JX032993	<i>Surirella</i> sp.
JX032994	<i>Surirella</i> cf. <i>bifrons</i>
JX032995	<i>Surirella</i> <i>splendida</i>
JX032996	<i>Surirella</i> sp.
JX032997	<i>Campylodiscus</i> cf. <i>hibernicus</i>
JX032998	<i>Campylodiscus</i> cf. <i>hibernicus</i>
JX032999	<i>Surirella</i> cf. <i>bifrons</i>
JX033000	<i>Surirella</i> <i>capronii</i>
JX033001	<i>Campylodiscus</i> cf. <i>hibernicus</i>
JX033002	<i>Campylodiscus</i> <i>levanderi</i>
JX033003	<i>Surirella</i> <i>tenera</i>
JX033004	<i>Surirella</i> sp.
JX033005	<i>Surirella</i> sp.

Table S3 Cont.

JX033006	<i>Surirella cf. biseriata</i>
JX033007	<i>Surirella sp.</i>
JX033008	<i>Surirella sp.</i>
JX033009	<i>Surirella biseriata</i>
JX033010	<i>Surirella cf. tenuissima</i>
JX033011	<i>Surirella sp.</i>
JX033012	<i>Surirella tenera</i>
JX033013	<i>Surirella sp.</i>
JX033014	<i>Surirella sp.</i>
JX033015	<i>Surirella sp.</i>
JX033016	<i>Stenopterobia pumila</i>
JX033019	<i>Surirella ovalis</i>
JX033020	<i>Surirella angusta</i>
JX033021	<i>Campylodiscus clypeus</i>
JX033022	<i>Surirella sp.</i>
JX033023	<i>Surirella sp.</i>
HQ912393	<i>Rhopalodia gibba</i>
HQ912392	<i>Rhopalodia contorta</i>
HQ912394	<i>Epithemia argus</i>
HQ912395	<i>Epithemia sorex</i>
HQ912396	<i>Epithemia turgida</i>

Table S4. Sequences used for the phylogeny of *Gomphonema parvulum* sensu lato in the Mouala river near Mirereni city (Poll5). TCC (Thonon Culture Collection) numbers are given.

Accession number	taxon name	TCC number
<u>KY661554</u>	<i>Gomphonema parvulum</i>	TCC426
<u>KY661555</u>	<i>Gomphonema parvulum</i>	TCC428
<u>KY661556</u>	<i>Gomphonema lagenula</i>	TCC429
<u>KY661557</u>	<i>Gomphonema lagenula</i>	TCC430
<u>KY661558</u>	<i>Gomphonema lagenula</i>	TCC431
<u>KY661559</u>	<i>Gomphonema lagenula</i>	TCC432
<u>KY661560</u>	<i>Gomphonema lagenula</i>	TCC433
<u>KY661561</u>	<i>Gomphonema parvulum</i>	TCC434
<u>KY661562</u>	<i>Gomphonema parvulum</i>	TCC436
<u>KY661563</u>	<i>Gomphonema parvulum</i>	TCC438
<u>KY661564</u>	<i>Gomphonema lagenula</i>	TCC440
<u>KY661565</u>	<i>Gomphonema parvulum</i>	TCC447
<u>KY661566</u>	<i>Gomphonema lagenula</i>	TCC463
KT072909	<i>Gomphonema lagenula</i>	TCC464
<u>KY661567</u>	<i>Gomphonema lagenula</i>	TCC466
KT072910	<i>Gomphonema lagenula</i>	TCC470
<u>KY661568</u>	<i>Gomphonema parvulum</i>	TCC471
<u>KY661569</u>	<i>Gomphonema parvulum</i>	TCC473
<u>KY661570</u>	<i>Gomphonema parvulum</i>	TCC478
KT072911	<i>Gomphonema parvulum</i>	TCC482
<u>KY661571</u>	<i>Gomphonema parvulum</i>	TCC485
<u>KY661572</u>	<i>Gomphonema parvulum</i>	TCC492

Table S4 Cont.

<u>KY661573</u>	<i>Gomphonema parvulum</i>	TCC494
KT072915	<i>Gomphonema lagenula</i>	TCC500
<u>KY661574</u>	<i>Gomphonema parvulum</i>	TCC592
<u>KY661575</u>	<i>Gomphonema saprophilum</i>	TCC593
KT072929	<i>Gomphonema saprophilum</i>	TCC595
<u>KY661576</u>	<i>Gomphonema parvulum</i>	TCC610
<u>KY661577</u>	<i>Gomphonema saprophilum</i>	TCC612
KF959646	<i>Gomphonema saprophilum</i>	TCC653
<u>KY661578</u>	<i>Gomphonema saprophilum</i>	TCC664
<u>KY661579</u>	<i>Gomphonema saprophilum</i>	TCC683
<u>KY661580</u>	<i>Gomphonema narodoense</i>	TCC725
<u>KY661581</u>	<i>Gomphonema narodoense</i>	TCC734
<u>KY661582</u>	<i>Gomphonema parvulum</i>	TCC736
KT072951	<i>Gomphonema clevei</i>	TCC811
KC736598	<i>Gomphonema clevei</i>	TCC507
<u>KY661583</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
<u>KY661584</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
<u>KY661585</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
<u>KY661586</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
<u>KY661587</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
<u>KY661588</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
<u>KY661589</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
<u>KY661590</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
<u>KY661591</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
<u>KY661592</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC

Table S4 Cont.

<u>KY661593</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
<u>KY661594</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
<u>KY661595</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
<u>KY661596</u>	<i>Gomphonema parvulum sensu lato</i>	not registered in TCC
HG530036	<i>Gomphonema saprophilum</i>	
HG530037	<i>Gomphonema parvulum</i>	
HG530038	<i>Gomphonema parvulum</i>	
HG530039	<i>Gomphonema parvulum</i>	
HG530040	<i>Gomphonema parvulum</i>	
HG530041	<i>Gomphonema parvulum</i>	
HG530042	<i>Gomphonema parvulum</i>	
HG530044	<i>Gomphonema parvulum</i>	
HG530045	<i>Gomphonema parvulum</i>	
HG530046	<i>Gomphonema parvulum</i>	
HG530047	<i>Gomphonema parvulum</i>	
HG530048	<i>Gomphonema parvulum</i>	
HG530049	<i>Gomphonema parvulum</i>	
HG530050	<i>Gomphonema parvulum</i>	
HG530051	<i>Gomphonema saprophilum</i>	
HG530052	<i>Gomphonema narodoense</i>	
HG530053	<i>Gomphonema narodoense</i>	
HG530054	<i>Gomphonema lagenula</i>	
HG530055	<i>Gomphonema lagenula</i>	
HG530056	<i>Gomphonema saprophilum</i>	
HQ912459	<i>Gomphonema parvulum</i>	
HQ912472	<i>Gomphonema affine</i>	
KJ011833	<i>Gomphonema affine</i>	
KJ011834	<i>Gomphonema affine</i>	
KJ011842	<i>Gomphonema parvulum</i>	