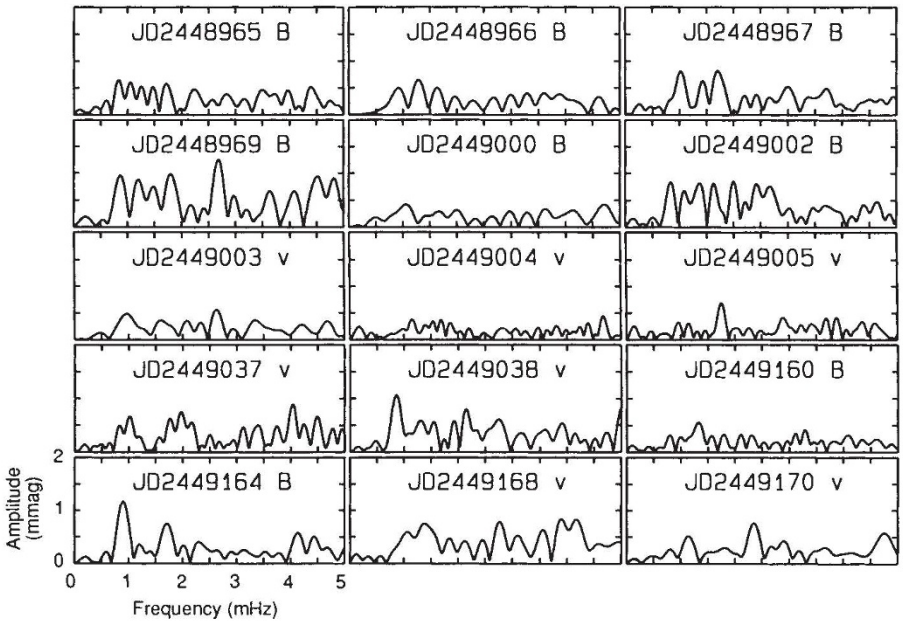

Fourier transforms of the 15 light curves listed in the table computed using Deeming's[8] algorithm. The ordinates are scaled in amplitude (half the peak-to-peak variation), not power. Each panel is 0.002 mag high. The julian date and filter used are listed in each panel. Some low-frequency ($\nu \leq 0.6$ mHz) sky transparency variations have been removed.

(and other Wolf–Rayet stars) by Blecha *et al.*[1] and others[5,6] using conventional photoelectric aperture photometers produced null results. Blecha (personal communication) has informed us that recent attempts by his collaborators to confirm the 627-s oscillations in WR40 using their CCD photometer have also yielded null results. Thus, the possibility of a spurious detection cannot be excluded.

Barring instrumental artefacts and statistical 'false alarms'[7] as the origin of the 627-s oscillations in WR40, our null result indicates that either the oscillations are modulated in amplitude or the circumstellar material surrounding WR40 is rarely sufficiently transparent to permit the oscillations to be observed. Although a pure radial mode is not excluded, the observations presented here suggest that if WR40 is really pulsating and if these pulsations are multiperiodic or modulated in some way, it will be extremely difficult to obtain a thorough knowledge of its pulsation spectrum for asteroseismological studies. For the moment, however, the challenge facing observers is to confirm the reality of the oscillations reported by Blecha *et al.* Oscillations of the amplitude reported are readily detectable with a 0.5-m telescope at a good photometric site. Given the astrophysical significance of a confirmation of the oscillations and the modest requirement of telescope aperture, observers are encouraged to cultivate an interest in this star. A 1-h run a few times per observing season is recommended.

Observations of WR40 (HD96548)

HJD start 2440000+	t (h)	N_{40}	Filt.	σ (mmag)
8965.52471	1.59	131	*B*	1.5
8966.53331	1.07	93	*B*	1.2
8967.52270	1.51	134	*B*	2.0
8969.45066	1.23	109	*B*	3.3
9000.55618	1.01	90	*B*	1.0
9002.53937	1.57	139	*B*	1.9
9003.54648	1.27	113	*v*	1.3
9004.52269	2.25	194	*v*	1.2
9005.51903	1.96	173	*v*	1.5
9037.56211	1.85	154	*v*	2.4
9038.48507	1.64	145	*v*	2.1
9160.19928	1.96	173	*B*	1.3
9164.22631	1.36	117	*B*	1.6
9168.27892	1.33	119	*v*	2.5
9170.19782	1.15	97	*v*	1.4
Σ	22.75	1981		

HJD, heliocentric julian date; t, duration of observations; N_{40}, number of 40-s observations; Filt., filter used (Johnson *B* or Strömgren *v*); σ, standard deviation of one observation with respect to the mean.

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More on tea scum

SIR — Although we agree with Jones[1] that the brown stain on tea (see ref. 2) is formed by the adsorption of tannin from tea on the surface of the film of calcium carbonate that settles on teapots, where does the solid film of $CaCO_3$ come from?

$CaCO_3$ precipitates when hard water is boiled, due to the expulsion of dissolved CO_2. The solubility of $CaCO_3$ from limestones in water is caused by its reaction with hydrolysed carbon dioxide, forming the soluble calcium bicarbonate (see equation below). When hard water containing this calcium bicarbonate is heated, the expulsion of CO_2 shifts the equilibrium of the equation to the left, leading to the precipitation of $CaCO_3$.

$$CO_2(g) + H_2O + CaCO_3(s) \rightleftarrows Ca^{2+} + 2HCO_3^-$$

The solid $CaCO_3$ is the familiar fur formed inside kettles and heating pipes in hard-water regions. We believe this is the primary cause of formation of the scum that floats on the surface of the teas prepared with hard waters.

Very simple experiments can reinforce this conclusion. If only hard water (with no tea) is boiled for a few minutes, a white scum is also formed on the surface (the process is easier to observe if a dark container is used). Alternatively, if tea is infused in distilled water in a clean beaker, no scum is formed, as already pointed out by Spiro and Jaganyl[2]. We have observed this results in the United Kingdom using either Milton Keynes or Southampton tap water supplies. In addition, we have never observed tea scum when the same kind of teas are prepared in Brazil, where the water from tap supplies is typically soft. Consequently, we do not agree with Lewin[3] that the major components of the scum on tea are high-melting point lipids.

It is also worth noting that $CaCO_3$ is a well-known adsorbent[4], particularly in the amorphous state, which can be expected to be the predominant form during the boiling of hard water. We can thus expect a strong adsorption of the tannin from tea by $CaCO_3$, giving rise to the coloured sticky scum.

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